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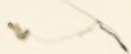
Southern Illinois
University
BULLETIN



Volume Seven

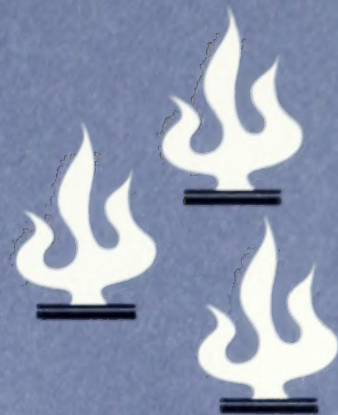
CENTRAL PUBLICATIONS

Southern Illinois University
Carbondale, 1965



*Graduate School
Catalog
1965-1967*

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Southern Illinois University Bulletin

OBJECTIVES OF SOUTHERN ILLINOIS UNIVERSITY

TO EXALT BEAUTY

*In God,
in nature, and
in art;
Teaching how to love the best
but to keep the human touch;*

TO ADVANCE LEARNING

*In all lines of truth
wherever they may lead,
Showing how to think
rather than what to think,
Assisting the powers
of the mind
In their self-development;*

TO FORWARD IDEAS AND IDEALS

*In our democracy,
Inspiring respect for others
as for ourselves,
Ever promoting freedom
with responsibility;*

TO BECOME A CENTER OF ORDER AND LIGHT

*That knowledge may lead
to understanding
And understanding
to wisdom.*

*Graduate School
Catalog
1965-1967*



Southern Illinois University Bulletin

SOUTHERN ILLINOIS UNIVERSITY BULLETIN
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MAY, 1965
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This Issue.....

of the *Southern Illinois University Bulletin* covers in detail questions concerning the Graduate School and applies to both the Carbondale Campus and the Edwardsville Campus. It supercedes Volume 3, Number 9.

THE FOLLOWING issues of the Southern Illinois University Bulletin may be obtained free from Central Publications, Southern Illinois University, Carbondale, Illinois 62903.

Schedule of Classes. Please specify *quarter* (fall, winter, spring, or summer) and *campus* (Carbondale or Edwardsville).

Graduate Catalog.

Division of Technical and Adult Education.

Financial Assistance.

Undergraduate Catalog. The catalog will be available (by June, 1965) for examination in high school guidance offices and libraries throughout Illinois and in some other states. Copies will be furnished free to educational institutions upon request and to new students upon matriculation. The catalog may be purchased at the University Bookstore for \$1; mail orders should be sent to Central Publications and must include remittance payable to Southern Illinois University.

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University Calendar



<i>FALL, 1965</i>	New Student Week	Sunday–Tuesday, September 19–21
	Quarter Begins	Wednesday, September 22
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 24–29
	Quarter Ends	Saturday, December 18
<i>WINTER, 1966</i>	Quarter Begins	Monday, January 3
	Quarter Ends	Saturday, March 19
<i>SPRING, 1966</i>	Quarter Begins	Wednesday, March 23
	Memorial Day Holiday	Monday, May 30
	Quarter Ends	Wednesday, June 8
	Commencement (Edwardsville)	Thursday, June 9
	Commencement (Carbondale)	Friday, June 10
<i>SUMMER, 1966</i>	Quarter Begins	Monday, June 13
	Independence Day Holiday	Monday, July 4
	Quarter Ends	Saturday, August 27
	Commencement (Carbondale)	Saturday, August 27
	Commencement (Edwardsville)	Sunday, August 28
<i>FALL, 1966</i>	New Student Week	Sunday–Tuesday, September 18–20
	Quarter Begins	Wednesday, September 21
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 23–28
	Quarter Ends	Saturday, December 17
<i>WINTER, 1967</i>	Quarter Begins	Monday, January 2
	Quarter Ends	Saturday, March 18
<i>SPRING, 1967</i>	Quarter Begins	Wednesday, March 22
	Memorial Day Holiday	Tuesday, May 30
	Quarter Ends	Wednesday, June 7
	Commencement (Carbondale)	Thursday, June 8
	Commencement (Edwardsville)	Friday, June 9

CLASSES BEGIN on the second day of the quarter, except that the evening classes (5:45 P.M. or later) on the Carbondale Campus begin on the first night of the quarter.



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GRADUATE INSTRUCTION at Southern Illinois University is the responsibility of the Graduate Faculty, which is selected from the faculties of the several instructional units at Carbondale and Edwardsville. Although the Graduate Faculty is not departmentalized, even those faculty members who participate in interdisciplinary programs are affiliated with specific disciplines as follows:

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 H. Dene Southwood, Ed.D. (Florida)
 Lawrence E. Taliana, Ph.D. (Purdue)
 Raymond E. Troyer, Ph.D. (Chicago)
 Mark M. Tucker, Ed.D. (California, Los Angeles)

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 Deward K. Grissom, Ed.D. (Columbia)
 John R. LeFevre, Ed.D. (Columbia)
 Charles E. Richardson, Ed.D.

(California)

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 William Wagman, Ph.D. (Columbia)
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 (Pennsylvania State)

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 William E. O'Brien, M.S. in P.Ed.
 (Indiana)
 William H. Ridinger, Ed.D. (New York
 University)
 Loren E. Taylor, Ed.D. (Columbia)

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 (Chicago)
 Eleanor G. Bender, M.S. (Southern
 Illinois)
 Philip F. Caracena, Ph.D. (Michigan
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 Thomas W. Dickey, M.A. (Southern
 Illinois)
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 Illinois)
 William R. Langbauer, M.A. (Roosevelt)
 Robert E. Lee, Ph.D. (Minnesota)
 Guy A. Renzaglia, Ph.D. (Minnesota)
 Louis Vieceli, M.S. in Ed. (Southern
 Illinois)

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 Illinois)
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 Claude J. Dykhouse, Ph.D. (Michigan)
 Troy W. Edwards, Ed.D. (Indiana)
 R. Jean Fligor, Ph.D. (Michigan State)
 Lawrence E. Hafner, Ed.D. (Missouri)
 Daryle E. Keefer, Ph.D. (Northwestern
 University)
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 Clarence D. Samford, Ph.D. (New York)
 Clarence W. Stephens, Ed.D. (Indiana)

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 (Northwestern)
 Mary M. Brady, Ed.D. (New York)
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 Gene L. Houser, M.S. (Michigan)
 Kenneth E. Martin, M.S. (Kansas State)
 Elise D. Palmer, Ed.D. (Tennessee)
 Harves Rahe, Ed.D. (Indiana)
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 Melvin S. Brooks, Ph.D. (Wisconsin)
 Robert B. Campbell, Ph.D. (Wisconsin)
 Paul J. Campisi, Ph.D. (Chicago)
 Robert C. Child, M.A. (Southern Illinois)
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 Peter A. Munch, Ph.D. (Oslo)
 Louis Petroff, Ph.D. (Southern
 California)

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 Wilson Record, Ph.D. (California)
 Gunter W. Remmling, Ph.D. (Berlin)
 Elliott M. Rudwick, Ph.D.
 (Pennsylvania)

Raymond L. Schmitt, Ph.D. (Iowa)
 William Simon
 Charles R. Snyder, Ph.D. (Yale)
 Eloise C. Snyder, Ph.D. (Pennsylvania
 State)

George M. Stabler, Ph.D. (Michigan
 State)

Donald L. Taylor, Ph.D. (Duke)
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 William J. Tudor, Ph.D. (Iowa State)
 James D. Turner, Ph.D. (Indiana)
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 B. E. McKay, Ph.D. (Syracuse)
 Dan Rainey, M.S. in Ed. (Southern
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 Ann Lee Carey, M.S. (Southern Illinois)
 Clifton Cornwell, Jr., M.A. (Missouri)
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 State)
 Robert Hawkins, Ph.D. (Northwestern)
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 (Northwestern)
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Mordecai Gorelik
Eelin S. Harrison, M.A. (Louisiana State)
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Archibald McLeod, Ph.D. (Cornell)
Christian H. Moe, Ph.D. (Cornell)
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Harold E. Broadbooks, Ph.D. (Michigan)
John C. Downey, Ph.D. (California)
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The Graduate School

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AS ONE OF the more rapidly growing universities of the United States, Southern Illinois University offers unusual opportunities for graduate study. The dynamic developments affect the graduate programs, many of which have characteristics of flexibility and experimentation less frequently found in mature universities. The University currently offers on its Carbondale Campus the master's degree in 49 fields of specialization, the specialist's certificate, or sixth year program, in education, and the Doctor of Philosophy degree in 18 fields. At its Edwardsville Campus the master's degree is offered at the present time in education, as is the specialist's certificate.

THE ROLE OF THE GRADUATE SCHOOL

No other educational agency has a greater responsibility than a graduate school. It is a repository of knowledge, a seeker after truth, a guardian of understanding, in a world too often alien to those roles. Its task is to liberate thought and its expression, to foster the means of scholarly investigation, to remain sharply critical of all who sink comfortably into a complacent *status quo*. Its students it inspires for study, its faculty for instruction, and both for critical inquiry. Among the public it promotes and defends the search after truth, and everywhere seeks to create a world in which thought and data may be freely interchanged.

The Graduate School of Southern Illinois University is cognizant of these ideals and objectives and seeks to achieve them through a carefully organized and strongly supported program of instruction and research. Through programs of assistance to candidates for advanced degrees; through its library, museum, and University Press; through its classrooms and laboratories; and through the achievements and high standards of its graduate faculty, it encourages the pursuit of excellence.

FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships are available in all areas of graduate study, upon application to the appropriate chairman, and are awarded by the Graduate School upon the basis of scholarship. Recipients are permitted to carry normal graduate schedules. The stipend for three quarters is normally \$1,620-\$1,890, plus remission of tuition but not other fees. Fellowships are ordinarily renewable for the summer quarter following the period of appointment. Students seeking the master's degree may hold

a fellowship for no more than four quarters; while doctoral students are limited to a total of eight. The fellowship holder has the obligation of carrying out an assignment, at the direction of his chairman, amounting to no more than ten hours per week. Applications should be made before February 1 preceding the academic year for which the fellowship is desired. Inquiries may be addressed to the dean of the Graduate School, or to the major department.

Graduate assistantships are available in a number of departments and research agencies. These positions pay a stipend which ranges from \$1,800 to \$3,600 for three quarters, with the exact amount depending upon the assignment and experience, plus remission of tuition but not other fees. Service of twenty hours per week, or a corresponding load in teaching or research, is required. Graduate assistants must carry no more than 12, and no less than 6, hours of graduate credit per quarter. Inquiries should be addressed to the appropriate chairman before February 1 preceding the academic year for which the assignment is sought.

A limited number of graduate assistantships are awarded to persons in student personnel work who are also resident fellows. Recipients are limited to 12 hours of credit per quarter. They receive room, board, remission of tuition but not other fees, and a stipend of approximately \$80 per month.

Research assistantships are available in a number of research agencies and projects. They ordinarily pay \$180-\$300 per month, with the exact amount determined by the assignment, plus remission of tuition but not other fees. Service equivalent to twenty hours per week is required. Inquiries should be addressed to the appropriate chairman or research director before February 1 preceding the academic year for which the assignment is sought.

HOUSING

Single graduate students will generally find it desirable to locate private housing facilities. The Housing Office maintains current information on rooms, apartments, houses for rent or sale, and trailer parks and can assist in locating accommodations. All arrangements for housing and all business transactions in the matter of housing are the sole responsibility of the student and the owner of the housing facility.

Current information concerning off-campus married housing facilities is available in the Housing Office. Experience has shown that satisfactory arrangements cannot be made by mail, a personal visit is usually required. Prices vary widely, ranging from \$20 per month for trailer spaces to \$100 or more per month for houses.

UNIVERSITY HOUSING

The University has no housing for students on the Edwardsville Campus. At Carbondale, University housing for married students includes 272 furnished one-bedroom, two-bedroom, and efficiency apartments and a

51-space trailer court. Because the demand for University housing for married students exceeds the supply, information should be requested from the Housing Office as early as possible.

ADMISSION TO THE GRADUATE SCHOOL

An applicant must meet the scholastic requirements of the University and be accepted by the Graduate School and as a major by one of its departments or divisions. The applicant's grade point average for previous college work will largely determine whether his admission to the Graduate School will be granted unconditionally or conditionally, or denied.

Application forms may be obtained from the Admissions Office. Students will not be informed of their admission status until after complete and official transcripts of all previous college work are on file in the Admissions Office, and the questions of admission to the Graduate School and acceptance for the major have been determined.

To permit sufficient time for these actions to be satisfactorily completed, there are deadlines for receipt of applications and official transcripts from each previous institution attended, as follows: the second Saturday in July for admission to the fall quarter, the last Saturday in October for the winter quarter; the last Saturday in January for the spring quarter; and the last Saturday in March for the summer quarter. Applications which are incomplete on the deadline date or are received later will be granted unclassified (non-degree) admission status for the quarter for which admission was originally sought. The application papers will continue to be processed for admission as a degree-seeking student but only for the quarter following the one originally applied for. If the student decides to enter as an unclassified student, this will in no way influence the decision relative to his acceptance as a degree candidate. Also, whether the work taken as an unclassified student will later count toward a degree will be subject to later decision by the Graduate School and the disciplines concerned.

A student who wishes to enter the Graduate School immediately after graduation may submit his application when he is within one quarter or semester of graduation. A transcript showing the work he has completed and the courses he is taking, together with a statement from his registrar that graduation will follow successful completion of those courses, is also necessary.

An undergraduate student who is within 16 quarter hours of meeting requirements for the bachelor's degree may take courses for graduate credit by applying for admission to the Graduate School and obtaining approval for the proposed major from the department concerned. Undergraduate students who take such courses for graduate credit must obtain the approval of the dean of the Graduate School at the time of registration.

A student who holds a bachelor's degree and who does not wish to become a candidate for a higher degree or for another bachelor's degree

but who wishes to take work in the University should apply for admission as an unclassified graduate student.

A student who is applying for a graduate assistantship or fellowship and who submits a transcript in support of that application must also submit an admission application and transcripts directly to the Admissions Office for admission processing.

ADMISSION TO GRADUATE STUDY AT THE LEVEL OF THE MASTER'S DEGREE

Admission to graduate study is a three-part process. The first step is submission of the required application and transcripts to the Admissions Office; the second is admission to the Graduate School; and the third is approval for the particular major indicated on the application.

In order to receive unconditional admission for study at the master's level, an applicant must hold a bachelor's degree and have a grade point average of 3.7 or higher, based upon a five point scale in which C equals 3.0. A student with an average of 3.4 through 3.69 may be granted conditional admission and will remain in conditional status until he earns 15 or more hours in graduate-level courses without obtaining more than one C grade and without obtaining any grade lower than C during the conditional period. No credit earned of C or lower while on conditional status will be applied on a master's program. Failure to meet these conditions will result in the student's being dropped from the degree program. He may then continue only as an unclassified student. An undergraduate average of less than 3.4 will permit admission only as an unclassified student during which time the student may attempt to qualify for conditional admission by earning 12 to 24 hours in 300- or 400-level courses with at least a 4.0 average. This work will presumably be taken in the area or areas in which the student desires to be admitted. However, none of this work will be applicable to the degree, and the student has no assurance that he will be accepted on a conditional status after having taken this course of action.

Graduates of institutions of limited accreditation who have a 3.4 average or higher may be granted conditional admission, depending upon the merits of the institution concerned.

ADMISSION TO ADVANCED GRADUATE STUDY

Admission to advanced graduate study is a three-part process. The first step is submission of the required application and transcripts to the Admissions Office; the second is admission to the Graduate School; and the third is approval for a particular major indicated on the application.

Admission to the Sixth-Year Specialist's Certificate program is based on an applicant's previous academic record, his educational experience, and his proposed goal. A master's degree from a recognized institution is regarded as the basic academic requirement for one wishing to pursue the sixth-year program.

Admission to the Graduate School on the doctoral level requires an accredited master's degree or its equivalent, an average in graduate

work of 4.25 or above on a 5-point grading scale, and acceptance for the major.

Through the Admissions Office, the dean of the Graduate School informs each student of any conditions which must be fulfilled before the major can be finally approved. Entrance examinations may be required in any case prior to action on the major proposed by the applicant.

ADMISSION OF FOREIGN STUDENTS

A foreign student is subject to all admission regulations and procedures described above.

Each foreign student must submit, in addition to the regular admission papers, a questionnaire for foreign students showing all previous schooling. The foreign student must also submit an official statement showing sufficient proficiency in English to do successful college work plus letters of recommendation from professors in the student's major field. These letters should specify the student's rank in a particular class or college. The Admissions Office will supply the student with the necessary forms and specific information. Such a student who has been notified that he is eligible for admission must show documentation as to his financial security as directed. The University does not assume responsibility for a student who arrives with inadequate resources.

ADVISEMENT

Each student admitted to the Graduate School is assigned one or more advisers representing his major and minor fields. The adviser assists the student in making out his program of studies, both quarter-by-quarter and long-range. He should arrange a conference with his adviser as early as possible so that his over-all program may be planned. Later conferences should be scheduled whenever they become necessary. As soon as the student gains approval for a thesis topic and thesis director, the latter is designated as chairman of the advisory committee. This committee advises him in the preparation of the thesis or dissertation, evaluates the work when completed, and supervises the final examination, written or oral, when one is required for his major.

The maximum burden of course work for graduate students during a quarter is 18 hours; 12 hours is considered to be a normal load. The maximum for graduate assistants, research assistants, and assistant instructors, who are employed half-time, is 12 hours; for persons who are otherwise employed full-time it is 8. Graduate fellows may in ordinary circumstances carry full loads. These maxima may be exceeded only with the written permission of the dean of the Graduate School.

A graduate student is expected to plan his work carefully; hence program changes after registration should seldom be necessary. Such changes must be approved by the student's chief adviser and the dean of the Graduate School. They may involve the payment of a program

change fee. Program change cards may be obtained from the Graduate Office.

The graduate student must assume responsibility for his progress by keeping an up-to-date record of the courses he has taken and by consulting periodically with his adviser. Responsibility for errors in program or in interpretation of regulations of the Graduate School and the University rests entirely upon the student. Advice is always available on request.

Since graduate work is carried on at both the Carbondale and Edwardsville campuses, it is the student's responsibility to see that his records in the Graduate Office, Registrar's Office, and with his major adviser are brought together on the campus where he wishes to graduate, well in advance of the time of graduation. Student records cannot be processed and the student approved for graduation unless these records are available on the campus where graduation is to occur at least six weeks in advance of the time of graduation.

GRADUATE ADVISERS

The first-named person is a Carbondale representative responsible for approving graduate plans of study. The second and third are graduate advisers at Alton and East St. Louis, respectively.

Accounting—Ralph D. Swick
 Agricultural Industries—Walter J. Wills
 Animal Industries—Alex Reed
 Anthropology—Philip J. C. Dark
 Art—Herbert L. Fink, John A. Richardson
 Biological Sciences—William C. Ashby,
 Ralph Axtell, Joseph S. Davis
 Botany—Robert H. Mohlenbrock
 Business—Henry J. Rehn, Walter L.
 Blackledge, John J. Glynn
 Chemistry—James W. Neckers, Marinus
 P. Bardolph, William J. Probst
 Community Development—Richard C.
 Franklin
 Design—Harold L. Cohen
 Early Childhood Education—
 Rebecca Baker
 Economics—Robert G. Layer
 Educational Administration and Super-
 vision—J. H. Hall, H. Bruce Brubaker,
 Harry H. Smith
 Elementary Education—Harold Lerch,
 David E. Bear, Robert H. Steinkellner
 English—Howard Webb, William
 Slattery, Stella Revard
 Foreign Languages—J. Cary Davis,
 Alfred G. Pellegrino
 Forestry—John Andresen
 Geography—Robert A. Harper, Melvin
 Kazeck
 Geology—Stanley E. Harris
 Government—Orville Alexander, (none),
 William Goodman

Guidance (Educational Psychology)—
 Thomas E. Jordan, Erwin Brinkmann,
 Raymond E. Troyer
 Health Education—Donald N. Boydston,
 Richard D. Spear
 Higher Education—George H. Hand
 History—George W. Adams, (none),
 Allan J. McCurry
 Home Economics—Eileen E. Quigley
 Industrial Education—Ralph O.
 Gallington
 Instructional Materials—Paul R. Wendt,
 Elmer H. Wagner
 Inter-American Studies—Albert W. Bork
 Journalism—Bryce W. Rucker
 Management—Henry J. Rehn
 Marketing—Paul M. Hoffman
 Mathematics—John M. H. Olmsted,
 Robert N. Pendergrass, Cellie C.
 Oursler
 Microbiology—Maurice Ogur
 Music—Robert E. Mueller, Lloyd G.
 Blakely
 Philosophy—Lewis E. Hahn
 Physical Education (Men)—Edward J.
 Shea, Walter C. Klein, Walter C. Klein
 Physical Education (Women)—Dorothy
 Davies
 Physical Sciences—(chairmen of the fac-
 ulties involved)
 Physics—Martin J. Arvin, Richard
 Boedeker, William Shaw
 Physiology—Harold M. Kaplan

Plant Industries—Alfred B. Caster
 Psychology—David Ehrenfreund
 Public Administration—Seymour Z.
 Mann, Edwardsville
 Radio-Television—(none), Harry M.
 Lyle, (none)
 Recreation and Outdoor Education—
 William H. Freeberg
 Rehabilitation Counseling—Guy A.
 Renzaglia
 Secondary Education—Clarence D.
 Samford, Myllan Smyers,
 Gordon C. Bliss
 Secretarial and Business Education—
 Harves C. Rahe, Mary M. Brady,

Keneth E. Martin
 Social Studies—William A. Pitkin
 Sociology—Charles R. Snyder, Robert B.
 Campbell
 Special Education—B. Elizabeth McKay,
 Orval G. Johnson, Mark Tucker
 Speech—Ralph A. Micken, Hollis L.
 White
 Speech Correction—Isaac P. Brackett,
 Hollis L. White
 Technology—Julian H. Lauchner
 Theater—Archibald McLeod, Andrew J.
 Kochman
 Transportation—Alexander R. MacMillan
 Zoology—William M. Lewis

BULLETINS

The *Southern Illinois University Bulletin* is published by the University in the issues listed on page ii.

TUITION AND FEES

The tuition and fees charged students are established by the Board of Trustees and are subject to change whenever conditions make changes necessary. At the present time, fees per quarter for graduate students are as follows:

Tuition	\$42.00*
University Center Fee	5.00
Student Activity Fee	10.50
Student Welfare and Recreational Facilities Building Fund Trust Fee	15.00
Total	<u>\$72.50</u>

Graduate students registered for 8 or fewer hours pay one-half tuition, full university center fee, and have an option on paying the student activity fee. The student activity fee includes the fees for limited hospitalization, entertainment, athletics, the student newspaper and yearbook, and such other privileges as may be provided.

Graduate assistants and fellows do not pay tuition and have an option on paying the student activity fee. They pay other fees.

In addition to the above fees, a student is subject to certain other charges under the conditions listed below:

1. A matriculation fee of \$5, which is assessed a graduate student the first time he registers if he is not a graduate of Southern Illinois University.

2. A late registration fee, which is \$2 for the first day and which increases \$1 each day to a maximum of \$5 when a student registers after the regular registration period has ended.

* Out-of-state students (non-Illinois residents) pay \$122 tuition rather than \$42.

3. A \$2 program-change charge whenever a student changes his program from the one for which he originally registered, unless the change is made for the convenience of the University.

4. A graduation fee of \$17; and, for doctoral candidates, a dissertation microfilming fee of \$25-\$35, depending upon the service selected.

5. Other charges which a student may incur are those for field trips, library fines, and excess breakage. Also a student taking a course involving use of materials, as distinct from equipment, will ordinarily pay for such materials.

GRADUATE DEGREES OFFERED

Graduate degrees are available in the following fields:

MASTER OF ARTS

Anthropology
Art
Botany
Chemistry
Economics
English
Foreign Languages
Geography
Government
History
Inter-American Studies
Journalism
Mathematics
Microbiology
Philosophy
Physical Sciences
Physics
Physiology
Psychology
Rehabilitation
Sociology
Speech
Speech Correction
Theater
Zoology

MASTER OF FINE ARTS

Art

MASTER OF MUSIC

Music

MASTER OF MUSIC EDUCATION

Music

MASTER OF SCIENCE

Agricultural Industries
Animal Industries

Biological Sciences
Botany
Business
Chemistry
Community Development
Design
Economics
English
Forestry
Geography
Geology
Home Economics
Industrial Education
Journalism
Mathematics
Microbiology
Physical Sciences
Physics
Physiology
Plant Industries
Psychology
Rehabilitation
Sociology
Speech
Speech Correction
Technology
Theater
Transportation
Zoology

MASTER OF SCIENCE IN EDUCATION

Art
Biological Sciences
Chemistry
Educational Administration and Supervision
Elementary Education
English
Foreign Languages
Geography
Guidance

Health Education
Higher Education
Home Economics
Industrial Education
Instructional Materials
Mathematics
Physical Education
Physical Sciences
Physiology
Recreation and Outdoor Education
Secondary Education
Secretarial and Business Education
Social Studies
Special Education
Speech
Speech Correction
Technology
Theater

DOCTOR OF PHILOSOPHY

Anthropology
Botany
Chemistry
Economics
Education
English
Geography
Government
Home Economics
Journalism
Microbiology
Philosophy
Physiology
Psychology
Sociology
Speech
Speech Correction
Zoology

MASTER'S DEGREES

GENERAL REQUIREMENTS

Forty-eight hours of acceptable graduate credit are required for the master's degree, except in fine arts, where 60 hours are necessary, and in psychology, rehabilitation counseling, and college student personnel work, where 72 hours are required. At least 24 hours must be earned in courses numbered 500 or above. No more than 16 hours earned for work done at another university or in extension, or both together, may be counted toward the degree. The student should not expect that work presented for transfer credit will automatically be accepted at face value. An evaluation is made in every case and may result in a reduction of the credit offered. Only in unusual circumstances will transfer credit be given for work bearing the grade of *C* or below. No credit toward the degree may be earned in correspondence; and only credit earned within a six-year period preceding the completion of requirements for the degree will be counted toward it.

Ordinarily a graduate student is expected to select both a major and a minor field, but he may be permitted by his advisory committee and the dean of the Graduate School to concentrate his efforts in one particular area of study. The graduate major, in most fields, consists of a minimum of 30 hours of credit in the area of special concentration; some fields, however, require as many as 40 hours for the major, in which case no minor is required. The graduate minor consists of a minimum of 15 hours. A student may have a double major recorded upon completing the necessary number (60 hours) of designated courses. Credit counted toward a master's degree at Southern or at another institution may not be used toward another master's degree at Southern.

Grades are recorded by the letters *A*, *B*, *C*, *D*, and *E*. An average of *B* (4.0) in all courses taken for graduate credit is a prerequisite of the master's degree. Credit for any course for which the grade given is below *C* will not be counted toward the degree. If a graduate student fails to complete a course by the end of the quarter, he may be given a grade of "deferred." Such a grade should be given for uncompleted work in progress, such as research or thesis work. A student who fails to complete a course, or all the requirements of a course, may be given a *W* grade, with an indication of the last week the student attended. A letter grade need not accompany the *W*, in the case of graduate students, regardless of the last week of attendance. A student wishing to remove a *W* should not register again for the course, but should complete work for the first registration.

Each candidate for the master's degree shall either write a thesis, which may be counted for not more than 9 nor less than 5 hours of credit, carry out a special project, or take specific courses on the graduate level, as may be recommended by his advisory committee and approved by the dean of the Graduate School. Ordinarily the thesis requirement will be applied, except in programs which have been spe-

cifically approved as non-thesis arrangements. Each student who does not write a thesis must submit to the Graduate School an approved copy of a research paper as evidence of his knowledge of formal research techniques. The subject of the thesis is to be reported to the Graduate School by the student and is to be approved by the chairman of the advisory committee and the dean of the Graduate School at least two quarters before the date of graduation. The completed thesis shall be submitted for evaluation to the members of the student's advisory committee at least four weeks before the expected date of graduation. Two copies of the approved thesis (the original and first carbon) must be presented to the Graduate School at least three weeks prior to the date of graduation, to be bound and shelved in the library.

Each candidate for a master's degree may be required to pass a comprehensive examination covering all his graduate work, including the thesis. This examination may be written or oral, or both, as determined by the student's advisory committee. If a written examination is required, at least half of it shall be of a subjective nature.

Each student seeking a master's degree, and having an undergraduate average below 3.7, must satisfy the graduate English requirement, either by passing the Graduate English Examination or by completing English 391 with a grade of *B* or better. The examination is offered by the Testing Service once each quarter. After a second failure in the examination, a period of six months must elapse before the student may again take it. After three failures, the student may not again attempt the examination, without special permission. After three failures, and passage of English 391 with a grade below *B*, the student will be placed on unclassified status, he may later become a regular student again, upon passage of 391 with a grade of *B* or better. The Graduate English requirement must be satisfied in the quarter preceding the quarter in which the student wishes to receive the master's degree.

Candidates are expected to meet requirements in force during the year of graduation, but due consideration will be given the fact that a student may have been admitted and may have planned his work when other requirements were current. Important changes in requirements are put into effect gradually. Any change in intention, no matter how minor, should be reported to the Graduate School, so that records may be accurately kept. It is especially important that the following data should be kept up to date on the student's record in the graduate office: the major and minor, the degree for which the student is a candidate or a potential candidate, the chairman of the advisory committee, and the thesis adviser.

The following deadlines are stated for the guidance of the candidate for the master's degree, who is advised to plan to finish each task well in advance and reminded that failure to meet an established deadline may result in postponement of graduation.

1. The graduate English test is to be taken by one with undergraduate average below 3.7 during the first quarter in which he is enrolled in a course given for residence credit.

2. Any foreign language requirement is to be met at least three months prior to graduation.

3. The thesis subject is to be approved by the chairman of the advisory committee at least twenty weeks before the date of graduation and is then to be reported by the student to the Graduate School.

4. The student is to supply a copy of his thesis to each member of his committee at least four weeks before graduation.

5. The completed thesis must be reviewed by the dean of the Graduate School at least two weeks prior to graduation. Since the dean may require certain changes, it should be presented for his inspection at least three weeks before graduation.

6. The preliminary checkup and application for graduation are to be made with the Graduate School and the Registrar's Office at least three weeks prior to the graduation date. Application forms, which may be secured from either of these offices, should be completed and returned to the Registrar's Office after payment of the graduation fee at the Bursar's Office.

MASTER OF ARTS AND MASTER OF SCIENCE DEGREES

A reading knowledge of a modern foreign language is required in all cases for the Master of Arts degree. The foreign language requirement is to be fulfilled at least three months prior to graduation. For the Master of Science degree, this requirement is adjusted to the field of study chosen.

The requirement that a thesis be submitted is administered for each individual student by his chief adviser and the dean of the Graduate School. In most cases the requirement is met by the presentation of a formal thesis, written in the conventional manner, rather than by the substitution of specific courses or special projects.

MASTER OF FINE ARTS DEGREE

Sixty hours of acceptable graduate credit are required for the Master of Fine Arts degree, of which a minimum of 24 hours must be on the 500 level. Further information may be obtained by writing the dean of the Graduate School.

MASTER OF MUSIC AND MASTER OF MUSIC EDUCATION DEGREES

Forty-eight hours of acceptable graduate credit are required for the Master of Music and Master of Music Education degrees, of which a minimum of twenty-four hours must be on the 500 level.

MASTER OF SCIENCE IN EDUCATION DEGREE

Forty-eight hours of credit are required for the Master of Science in Education degree. A candidate for the degree who is a prospective teacher in the public schools of Illinois must meet the minimum educational requirements for teaching in Illinois, as established by the State Teacher Certification Board. Any exception to this rule must be approved by the dean of the College of Education and the dean of the

Graduate School. The student should seek counsel regarding the completion of these requirements before his first enrollment for graduate work.

The thesis requirement will be administered for each individual student by the chairman of the major department, the student's chief adviser, and the dean of the Graduate School. For those in educational administration and elementary education, Educational Administration and Supervision 500 or a similar research course and Guidance 420 or 422 will be required in lieu of the thesis. There is no foreign language requirement for the Master of Science in Education degree.

SPECIALIST'S CERTIFICATE

The Specialist in Education Program is for qualified students with master's degrees or their equivalents who wish to pursue a planned Sixth-Year Program leading to specialization in an educational field. Certain Sixth-Year Programs developed and offered in professional education areas have been approved by the Graduate Council in line with the following minimum requirements.

Students seeking admission to the Specialist in Education Program will follow the same procedures that apply to admission to other graduate programs. Admission to the Specialist in Education Program requires a grade point average of 4.25 for graduate work, although the dean of the Graduate School may admit at his discretion persons having lower averages for graduate work. Departments or divisions may establish a higher scholarship requirement for admission and may use additional selective criteria which are appropriate to the specialization field. The student's previous work shall have provided a proper base of general and special preparation for the Sixth-Year studies; if this is lacking, additional work must be taken to establish the base. Two years of experience relevant to the specialized field are required.

An advisory committee of three members for each candidate shall be appointed by the dean of the Graduate School upon the recommendation of the chairman or head of the respective department or division.

A minimum of 45 quarter hours of work beyond the master's degree or its equivalent is required. This work must be planned early by the student and his advisory committee, must clearly move the student toward the specialization he seeks, and must conform to a Specialist in Education Program approved by the Graduate Council. A minimum grade point average of 4.25 for all work in the Specialist in Education Program is required. A maximum of 12 quarter hours of credit may be taken at the 400 level. A combined maximum of 9 quarter hours of graduate credit earned in extension and in other graduate schools may be counted. All such work must be approved by the student's advisory committee and must carry a grade of *B* or better. No credit earned through correspondence or used in attaining another degree or certificate may be counted. Credit earned before September, 1966, while the student was on an unclassified status will not count in his program unless approved

by his advisory committee. After September, 1966, no credit earned while the student was on an unclassified status may be counted except with the recommendation of his advisory committee with reference to credit earned while the application for admission was being processed. All credit used must have been earned within seven years prior to the completion of the program.

Full-time, full-load residence of one quarter (or two summer sessions of at least eight weeks each) is required. Students who are employed full-time may not carry more than one course per quarter.

With the prior approval of the student's advisory committee, credit toward the Specialist in Education Program may be earned at both campuses of the University in programs approved on both campuses by the Graduate Council.

DOCTOR OF PHILOSOPHY DEGREE

The minimum requirement for the Doctor of Philosophy degree is 48 hours, or equivalent, beyond the master's degree or its equivalent, plus the dissertation. A total of 96 hours beyond the master's degree or its equivalent is required. All work at other institutions offered in partial fulfillment of requirements for the Ph.D. degree is submitted to the Graduate School for approval when the student seeks admission to candidacy. Any such transfer of credit will be subject to the following rules: (1) that it be made an integral part of the student's total plan; (2) that it be of excellent quality; (3) that it be earned within the preceding five years (credit earned more than five years prior to the request may be evaluated and rejected or accepted for partial value); (4) that in no case will the acceptance of transferred credit reduce the basic residence requirement or reduce such basic tools or requirements as the student's committee may prescribe. No more than 24 hours may be transferred toward the Ph.D. degree, beyond the master's degree or its equivalent, except in cases in which the student's advisory committee recommends that work be taken elsewhere.

An average of 4.25 ($A = 5$) is required, as a minimum, for the Ph.D. degree. No course in which the grade is below *C* counts toward the degree; however, the grade does count in the student's average. Each student admitted to advanced standing in the Graduate School is expected to maintain an average of at least 4.25. Those falling below this level will be subject to review, and may be placed upon unclassified status or dropped from the program.

Competence in two foreign languages, or one language and statistics, shall be required of each candidate for the Doctor of Philosophy degree. The advisory committee is to decide in each case which alternative is to be followed, and which language or languages will be acceptable. Proficiency examinations may be used to test these competencies. If courses are taken to satisfy this requirement, they shall not count toward the minimum credit requirement for the degree. Students whose native tongues are other than English may offer English as one language. A

student who does so may not then offer his native tongue as a second language, but he may offer another language, statistics, or any other approved research tool. This research-tools requirement must be satisfied before the student may be admitted to candidacy.

Examinations will regularly be given in French, German, Italian, Russian, and Spanish by members of the faculties in foreign languages. Examinations will be given in other languages by special arrangement, in cases in which the language is needed in dissertation work. These examinations are given once each quarter. Students may present two or more books or periodicals, totaling no less than 625 pages, suggested by their advisory committees and accepted by the faculties of foreign languages. The examiner will select passages from these books to be translated, with the aid of a dictionary, if necessary. In addition, a general passage must be translated. The required proficiency will approximate that of a student who has completed two years of college language with a *B* average.

Students taking the doctoral foreign language examination will be allowed two failures in a given language, then will be required to take the course 161 in the particular languages in question before being allowed to take the examination again. After a third failure in a given language, the student must successfully petition the dean of the Graduate School before taking the examination a fourth time.

Doctoral candidates may substitute competence in statistics for one foreign language, with the approval of the major department. This competence may be demonstrated by the acceptable completion of a sequence of graduate courses in statistics or by passing a proficiency examination equivalent to the final examination of the final course in a given sequence and administered by its instructor. Candidates who substitute competence in statistics for a foreign language may receive credit toward the doctorate for only those statistics courses taken beyond the basic one-year sequence in statistical inference, such as Mathematics 410–412 and 480–482, and Guidance 422b or Psychology 421, and Guidance 520a or 520b.

A program leading to the Doctor of Philosophy degree requires a minimum of three “years” in resident study at an accredited educational institution. Such years ordinarily are defined as follows:

First year—The time required to fulfill all requirements for the master’s degree or the equivalent.

Second year—The time required to advance from the completion of the first year’s work through the completion of the preliminary examination. This involves obtaining satisfactory grades in an acceptable program of at least 36 hours of work, or its equivalent, completing the research-tools requirement, and passing the preliminary examination.

Third year—The time spent between passing the preliminary examination and the completion of all requirements for the doctor’s degree, including the dissertation, and the final examination. The third “year” may not be shorter than six months.

In order to achieve the Doctor of Philosophy degree one must be

in full-time residence at graduate work at Southern Illinois University for a minimum of two academic years.

A student who spends the first two years in residence at Southern Illinois University may petition to spend the last year *in absentia*. A student who has completed the first year of graduate work elsewhere must be in residence during the two remaining years. In exceptional cases, a student with two years of graduate study elsewhere will be permitted to take the preliminary examination, provided he has fulfilled the research-tools requirement. If such a student passes the preliminary examination, he may complete the requirements for the Ph.D. degree by devoting the third year to research in residence.

Candidates may be given leaves of absence by the dean of the Graduate School (not to exceed one-fourth of the required residence) to make use of special facilities elsewhere.

A student may partially satisfy the residence requirement by attending summer quarters at Southern. Full-time attendance during three summer quarters is the equivalent of one academic year's residence. However, at some time during the second or third year of his doctoral program the student must be in full-time residence at the University through three successive quarters.

The term "residence" as used above means the physical presence of the candidate, from day to day, in the immediate area in which classes are offered, complete University library facilities are available, and academic supervision can be provided at any time at the discretion of the advisory committee. A student shall be considered in full-time residence only during those quarters in which he shall be registered for at least twelve hours of credit, or its equivalent in Dissertation 600. The rate of residence credit given to students carrying less than twelve hours per quarter shall be determined by the Graduate Council.

All work for the Doctor of Philosophy degree must be completed in not more than five calendar years from the close of the quarter in which the student is admitted to candidacy for the degree. If completion of requirements is delayed for reasons beyond the control of the student, he may request an extension of time by petitioning the dean and the Graduate Council, but he should do so only after consultation with his adviser. Under such circumstances, a student may be required to take another preliminary examination and be admitted to candidacy a second time.

A dissertation showing high attainment in independent, original scholarship or creative effort shall be submitted toward the requirements for the Doctor of Philosophy degree. It shall be supervised by a faculty member, who is approved by the dean of the Graduate School, and who thus becomes chairman of the candidate's advisory committee. The topic of the dissertation must be approved by the supervisor and by the dean of the Graduate School before the project is undertaken.

The student must register for the course Dissertation 600 for at least three normal full-time quarters or their equivalent. Students may register for Dissertation 600 on a full-time or fractional basis. In any

case the grade will be deferred until the dissertation is completed and approved.

The dissertation must be approved by the supervisor and at least one other qualified reader before being circulated among advisory committee members. It must be submitted to the committee, in complete and acceptable form, at least one month before the date of graduation.

All dissertations will be microfilmed according to a plan approved by the Graduate School. Three weeks before the date of graduation the candidate must have fulfilled the following requirements:

1. Submission to the Graduate School of two approved, typewritten copies of his dissertation (one the original copy) and a signed microfilm contract.

2. Submission to the Graduate School of an abstract of the dissertation of 600 words or less (or a description of the project, if it is a creative work).

3. Payment of \$25 to cover cost of publication of abstract and microfilming of the dissertation. If copyright is desired, an additional fee will be required.

SUMMARY OF REQUIREMENTS

1. Forty-eight hours of credit beyond the master's degree, or its equivalent, and the dissertation are required. The total requirement is 96 hours beyond the master's degree or its equivalent.

2. The dissertation shall represent at least three quarters of full-time work and at least 36 hours of credit.

3. Credit up to 24 hours beyond the master's degree may be transferred. Upon the express recommendation of the advisory committee that work be taken elsewhere, more transfer credit may be approved.

4. An average of 4.25 in graduate work is required for admission to a doctoral program and for final qualification for the degree. No credit with a grade below C shall count toward the degree; however, the grade shall count in the student's average.

5. Language proficiencies must be demonstrated by examinations given by the Department of Foreign Languages; proficiency in statistics may be shown by examination or by successful completion of one of three course sequences: Guidance 422b (or Psychology 421), 520-8; Mathematics 410, 411, 412; or 480, 481, 482. Upon petition other research tools may be approved in place of a foreign language or statistics.

6. Two academic years, or the equivalent, of full-time graduate work in residence are a minimum requirement. Each student must spend at least three successive full-time quarters in residence.

7. The degree may not be conferred less than six months, nor more than five years, after admission to candidacy. Admission to candidacy follows successful completion of at least 36 hours of course work, the research-tools requirement, and the preliminary examination.

8. Each student must submit with the approved dissertation a signed microfilm contract and evidence of payment to the University of the microfilm fee.

RESEARCH

Research is an integral part of higher education and is essential to effective teaching at the university level, as well as of value in its own right. Southern Illinois University encourages its faculty members to undertake research and assumes the responsibility of promoting a research program. The dean of the Graduate School is the agent of the University in the stimulation and co-ordination of research.

In keeping with this policy, the University aids individuals and groups interested in research by granting reductions in teaching or administrative loads to compensate for time spent in research and by grants of funds for travel, equipment, supplies, student help, and research assistants. Grants-in-aid for individual research projects are available to faculty members through the special research projects program administered by the Office of Research and Projects, which functions as a part of the Graduate School. The Office of Research and Projects also supervises co-operative research programs and assists applicants in the preparation and submission of research proposals that involve outside support, especially from such sources as government, foundations, or business and industry.

Instructional Units 2

GRADUATE MAJORS on the Carbondale Campus are usually offered on a departmental basis, although a few interdepartmental majors are available. On the Edwardsville Campus the graduate programs are supervised by the various academic divisions.

EDWARDSVILLE

The Master of Science in Education degree, with an academic concentration in elementary education, guidance, administration and supervision, special education, and some areas of secondary education, may be completed on the Edwardsville Campus. Graduate courses are available in most business, fine arts, and liberal arts fields as well as in education.

The Master of Science in Education degree involves 16 hours in basic education courses, 16 hours in an area of concentration, and 16 hours of electives. Each student seeking the master's degree must work out an approved program with the appropriate adviser in education. There are advisers in some of the non-education fields at Alton and East St. Louis who can advise students in their particular subject fields.

Graduate courses taken on one campus of Southern Illinois University may be used for degree-earning purposes at the other campus, but the courses must be ones which the major adviser has approved for the student's program of study. One working for a graduate degree other than the M.S. in Ed. degree or the M.A. degree in English must enroll at Carbondale and have a major adviser there, but he may take part of his work toward a graduate degree or toward a Specialist's Certificate at Alton or East St. Louis, provided that the particular courses needed are available at the latter places and that they have been authorized for his program by his adviser. Students who major in non-educational fields at present must expect to take a substantial part of their graduate work at Carbondale. Their graduate records are kept at Carbondale, and the thesis work and oral examinations are cared for at that campus.

One who wishes to work toward the M.A. degree in English should see the graduate adviser in English, at Alton or East St. Louis.

MASTER OF SCIENCE IN EDUCATION DEGREE

1. General Requirements: The Edwardsville Campus offers the Master of Science in Education degree. A graduate student may obtain the degree by earning a minimum of 48 hours in approved graduate courses

with at least 24 in 500-level courses. Only grades C or higher may be credited toward the master's degree, but a 4.0 (B) minimum average is required for graduation. Each student should write a satisfactory research paper, demonstrate adequate proficiency in the use of English, and pass a comprehensive final examination.

2. *Fields of Specialization*: Designed primarily as a graduate in-service education program, opportunity is provided for specialization in school administration, guidance, or a teaching field. A student with the help of a graduate adviser can plan a tailor-made program which will meet his needs and correlate well with his undergraduate studies. In general, a student will earn 16 hours from a common core of foundation courses in education, 16 hours from the specialized fields of school administration, elementary education, guidance, secondary education, or special education, and 16 hours of electives from professional education or cognate areas. The specialization in secondary education consists of courses in a teaching field and may be supplemented by electives from cognate areas.

3. *Student Option*: All students who have earned graduate credit in an approved master's degree program at the Alton and East St. Louis centers prior to the effective date of the program described above shall be permitted to graduate under the Graduate School rules effective at the time of admission, or shall be permitted to apply their graduate credit toward the Master of Science in Education degree at the Edwardsville Campus.

4. *Certification Prerequisite*: Each student who expects to work in the elementary or secondary schools must meet the requirements for a teacher's certificate appropriate for his area as a prerequisite for completing a master's degree program. Other students who may desire to concentrate in guidance, for future work in business personnel offices or for pastoral counseling, shall meet the appropriate prerequisites for each of these areas. The student's adviser shall determine what prerequisites must be met.

COMMON CORE OF FOUNDATION COURSES

Each student shall take one course from each of groups one and two of the foundation courses listed below and also shall take one course from each of two other groups of foundation courses. When a student has taken any of the listed foundation courses during his undergraduate study or in prior graduate study that will be out-dated for application on a master's degree program, he may substitute for each such course some other graduate course in education that his adviser will approve for use as a part of his hours of foundation work.

1. *Measurement and Statistics*: Guidance 420, Statistics; 422, Educational Measurements I; 426, Individual Inventory; 520, Advanced Educational Statistics; or 522, Educational Measurements II.

2. *Research*: Educational Administration and Supervision 500, Research Methods (required of all).

3. *Curriculum*: Educational Administration and Supervision 460,

The Curriculum; Elementary Education 561, The Elementary School Curriculum; Secondary Education 550, The Core Curriculum; 562, Workshop in High School Curriculum; or Guidance 542, Basic Principles of Guidance.

4. *Developmental Psychology and Learning*: Guidance 511, Educational Implications of Learning Theories; 515, Psychological Aspects of Education; 525, School Behavior Problems and Their Prevention; 562a, Child Development in Education; 562b, Adolescent Development in Education; Special Education 414, The Exceptional Child; or Psychology 407, Theories of Learning.

5. *Social Foundations*: Educational Administration and Supervision 411, Seminar in Instruction; 431, History of Education in the United States; or 554, Contrasting Philosophies of Education; 502, Seminar in Comparative Education.

The student will work out his specialization with a graduate adviser.

CARBONDALE

AGRICULTURAL INDUSTRIES

A Master of Science degree may be earned with a major in agricultural industries. Within the major field two specializations are offered; one is agricultural economics, and the other is agricultural services.

The agricultural economics specialization requires a minimum of 24 hours in courses in agricultural economics and the School of Business. A thesis is required. Graduates from this program are sought by industry and government. Many receive offers of financial assistance for continued work toward the doctoral in agricultural economics. In this program the student may take work in farm credit, farm policy, farm management, and agricultural marketing and prices.

The agricultural services specialization requires a minimum of 24 hours in agriculture. The remaining work may be in any field in the University. A thesis is not required, but an approved research paper must be submitted. This program is designed primarily to meet the needs of individuals wishing to strengthen their training and provide the basis for performing their work more efficiently. The participants include farm advisers, vocational agriculture teachers, soil conservation personnel, and industrial specialists in agriculturally related businesses.

In both master's specializations the individual's course program is designed to fit his particular goals and objectives.

Students interested in agricultural economics on the doctoral level should consult with the Department of Economics in the School of Business concerning approval to major in economics with a specialization in agricultural economics.

For further information concerning the program and availability of assistantships, write to the Chairman, Department of Agricultural Industries.

ANIMAL INDUSTRIES

The Department of Animal Industries offers major work for the Master of Science degree. A minimum of 24 hours in animal industries courses, including a thesis, is required. Programs may be designed to meet the desires of candidates with emphasis upon animal nutrition, breeding, physiology or production of beef, dairy, poultry, sheep, or swine. The fields of major emphasis may include courses in other related departments such as chemistry, microbiology, physiology, and zoology. Graduates from this program wishing to work for a Doctor of Philosophy degree have many opportunities for financial assistance at other institutions.

Students majoring in another department may choose a minor in animal industries.

For information concerning a specific program and assistantships available, write to the Chairman, Department of Animal Industries.

ANTHROPOLOGY

Graduate work is available in anthropology leading to the Master of Arts and the Doctor of Philosophy degrees.

Acceptance for graduate study in anthropology is at the discretion of the Department of Anthropology. When submitting the application for admission, the student must arrange to have sent three letters of recommendation addressed to the chairman of the department, together with a set of transcripts, graduate and undergraduate. The Graduate Record Examination must be taken by all students, who have not done so previously, at the first opportunity after their entry into the department.

No specific program of previous work is required, and applicants with academic degrees in fields other than anthropology are accepted. The Department of Anthropology does not require that every student take a master's degree on his way to the doctorate. Whether he does or not is a matter for decision by the student and the department. The University requires a minimum of 48 hours plus the thesis for the master's degree and a minimum of 96 hours plus the dissertation for the doctorate. These hour-requirements should be regarded as minimal. In the Department of Anthropology, the program of study for each student will be worked out by the student and his adviser, and decisions as to curriculum, research, and examinations will be made on an individual basis. A student's overall progress in his studies is reviewed at the end of each year, or as may be necessary, in order to see that the requirements of the department are being met and that the student's best interests are being served.

For students coming into the department with bachelor's degrees in anthropology, a minor of at least 16 hours is required in another, pertinent field, such as sociology, psychology, geology. This requirement must be fulfilled before a student presents himself for Part II of the General Examination. The student may expect to be examined on his minor field during that examination. For students coming into anthro-

pology with degrees in other disciplines, no minor is required; all study will be concentrated in anthropology, though inter-disciplinary study may be recommended.

The Department of Anthropology normally expects that each student, before he submits his doctoral dissertation, shall have undertaken field work applicable to some anthropological problem approved by the department. It is not necessary that the dissertation be based on this field work, although this is the usual practice.

For both higher degrees, a student must pass both parts of the departmental general examination. Candidates for the master's degree must also pass one language examination and present a thesis. Candidates for the Ph.D. degree must also pass two language examinations, the Special Examination, and present a dissertation.

The language examinations are given by the Department of Foreign Languages, from which current rules of operation should be obtained. They are written and last two hours. The use of a dictionary is permitted. The examinations are in two parts, one covering technical anthropological works and the other non-technical materials. The languages accepted are at the discretion of the Department of Anthropology; those usually recommended are French, German, Russian, and Spanish. A doctoral candidate whose native language is other than English may, in some cases, be permitted to offer English for one language but must pass the Graduate English Examination.

Part I of the general examination consists of the written final examinations for courses 501, 503, 505, 507, 509. A student must pass all of these examinations, whether he attends these courses or not, in order to complete Part I. On completion of Part I, the student may proceed to Part II, which is a three-hour oral examination, provided he has completed requirements for a minor, if pertinent, and one of the foreign language requirements.

After successful completion of the general examination, a student proceeding to present himself as a candidate for the Ph.D. degree will consult with the department in order to select a special field of study in preparation for the special examination. It is expected that the student will spend not less than a year between the successful completion of the general examination before presenting himself for the special examination. A special field of study consists, usually, of two topics with reference to a particular geographical area. The student may not present himself for the special examination until he has completed the second of the foreign language requirements. Upon completion of the special examination, the student becomes a recognized candidate for the degree.

ART

Graduate programs in art lead to the Master of Fine Arts, Master of Arts, and Master of Science in Education degrees. The candidate is expected to select an area of specialization (studio, art history, or art education) around which his program will be planned in consultation with the major professor in that area.

Each program on the master's level requires the successful completion of a thesis and oral examination before the candidate can be certified for graduation. In addition, the M.F.A. degree candidate must present a graduate exhibit of his creative work before the date of graduation, and the M.A. degree candidate must demonstrate a reading knowledge of French or German.

Those seeking the M.S. in Ed. degree are required to complete 16 hours of work advised by the College of Education.

No general statement can be made concerning undergraduate requirements in art for admission to candidacy for one of the graduate degrees. A strong undergraduate major in art is desirable. The student who lacks such preparation may, on the recommendation of his major professor, be required to complete undergraduate deficiencies. In such cases, quality of work rather than appraisal of credit provides the basis for judgment.

The University asserts the right to select an example of the work of each candidate for the master's degree in art. Such works become a part of the permanent collection of student works from which exhibitions may be prepared.

Throughout the year, a program of exhibitions is presented in the Allyn Gallery. Exhibitions are chosen with the intention of providing students and interested public with a continuous experience of viewing and judging significant and representative works of art of contemporary or historical character.

ASIAN STUDIES

Courses available in the field of Asian studies are listed by department and include the following: Agricultural Industries 417, Anthropology 483, 585, Art 571, 572, Economics 461, Geography 401, 522, Government 457, 458-12, 480, 521, 595, History 449, 455, 510, 590, Philosophy 490. Theses and dissertations on Asian topics may be written by students in any of several majors.

Interested graduate students may consult with members of the Committee on Asian Studies in regard to their programs or research. Further information may be obtained by writing to the Committee on Asian Studies or to its members: Floyd F. Cunningham, professor of geography; William H. Harris, professor of philosophy (chairman of the committee, 1964-66); Hellmut A. Hartwig, professor of foreign languages; H. B. Jacobini, professor of government; Joel Maring, instructor in anthropology; Ping-chia Kuo, professor of history; Robert Jacobs, professor of education and co-ordinator of international programs; and Donald A. Wells, associate professor of economics.

A graduate minor is offered in Asian studies, and students who are interested should consult with the chairman of the committee.

BIOLOGICAL SCIENCES

The program for the Master of Science in Education degree in biological sciences in secondary education is jointly administered by the De-

partment of Secondary Education and by the four life science departments (Botany, Microbiology, Physiology, and Zoology). Dr. Clarence D. Samford, of the Department of Secondary Education, is responsible for determining the education courses and for approving and administering the program. Dr. William C. Ashby of the Department of Botany is the delegated adviser in biological sciences. Admission to the program requires undergraduate preparation equivalent to 24 hours in each of two life science departments, and secondary education requirements, including student teaching. Deficiencies in preparation may be made up after conditional admission to the program.

A minimum of 48 hours of approved graduate credit is required for the degree. The normal distribution is 16 hours in education and 32 hours in biological sciences. Students must elect either a two-department or a three-department option for their graduate courses in life science to give adequate breadth in biology. Including the undergraduate preparation, the total work in biological sciences must include a minimum of 4 hours in one department, 15 hours in a second, and 24 hours in each of the other two. The individual program to be followed will depend on the student's needs, interests, and objectives.

BOTANY

Graduate work may be taken in the Department of Botany as a major or minor leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees and as a part of the program in biological sciences leading to the Master of Science or the Master of Science in Education degree.

Applicants for the advanced degrees must be approved by the department. Queries concerning graduate work in botany should be made to Dr. William D. Gray, graduate adviser in botany. To be eligible for graduate work in botany, the student must have an equivalent to an undergraduate minor in botany. Certain deficiencies may be made up concurrently with graduate work.

In accordance with the general requirements of the Graduate School, a candidate for the Master of Arts or Master of Science degree must complete a thesis.

The Ph.D. degree requires, in addition, a reading knowledge of two foreign languages or one foreign language and statistics, if recommended by the candidate's committee.

BUSINESS

The Departments of Accounting, Management, and Marketing combine in offering a major in business on the graduate level leading to the Master of Science degree. Within the limits of courses offered, the individual candidate may concentrate his work in any of these three areas. All candidates will be expected to offer a substantial amount of work in economics.

Students entering the business program with a liberal arts, engineering, or other non-business background will normally be required

(additionally) to complete certain undergraduate courses in preparation for advanced work in the graduate courses. If no previous work has been taken in business, completion of the work for the Master of Science degree will normally require two years of study. Applicants for admission must complete the Graduate Record Examination.

Courses in these areas may also be taken as a minor by graduate students majoring in other departments of the University.

CHEMISTRY

Graduate courses in chemistry may lead to the Doctor of Philosophy degree or may comprise a major or minor toward the Master of Arts, Master of Science, or Master of Science in Education degree. Interested students should contact the department chairman for further details.

MASTER OF ARTS AND MASTER OF SCIENCE DEGREES

In addition to the general requirements of the Graduate School, minimum requirements for the Master of Arts (or Master of Science) degree in chemistry are as follows:

1. (a) Earned credit, either as an undergraduate or graduate student, in Chemistry 446, 461-12, 490, 575; (b) Earned credit, or proficiency shown in a diagnostic examination, in Chemistry 411, 433, 444;
2. (a) A three-course subject-matter sequence in chemistry at the 500 level; (b) One additional chemistry course at the 500 level in each of two areas other than 2(a); (Chemistry 451-7 may be substituted for *one* of these courses.)
3. A minimum of 5 hours in research and thesis (Chemistry 597);
4. A final oral examination;
5. A reading knowledge of German (or one year of undergraduate credit); and
6. Attendance at seminar (Chemistry 575 or 595).

If an outside minor is chosen, 30 hours of chemistry must be earned.

MASTER OF SCIENCE IN EDUCATION DEGREE

In addition to the general requirements of the Graduate School, minimum requirements for the Master of Science in Education degree with a major in chemistry are as follows:

1. (a) Earned credit, either as an undergraduate or graduate student, in Chemistry 460 or 461-12, 490, 575; (b) Earned credit, or proficiency shown in a diagnostic examination, in Chemistry 411, 433, 444;
2. (a) A two-course, subject-matter sequence in chemistry at the 500 level; (b) One additional 500-level subject-matter course in chemistry; (Chemistry 451-7 may be substituted.)
3. A minimum of 30 hours in chemistry and 15 hours of graduate credit in education, including at least 3 hours for a scholarly report on some phase of chemistry or chemistry education;
4. A final oral examination;

5. A reading knowledge of German, Russian, or French (or one year of undergraduate credit); and
6. Attendance at seminar (Chemistry 575 or 595).

This degree is considered terminal for graduate study in chemistry.

DOCTOR OF PHILOSOPHY DEGREE

1. The courses required shall include those specified for the M.A. degree or their equivalent.
2. In the minor field a minimum of 9 hours at the 500 level is required. In the case of a minor taken outside of the department the requirements are determined by that department.
3. The hours in the major are determined by the staff in the field of chemistry involved with the approval of the advisory committee. Individual variations are expected, but 20-30 hours, exclusive of research, would be a typical program.
4. The minimum in Doctoral Research and Dissertation (Chemistry 598 and 600) is 48 hours.
5. Qualifying examinations must be passed in four of the five fields of chemistry including analytical, biological, inorganic, organic, and physical. These should be taken prior to the completion of 36 hours of course work. One entering with a master's degree should pass these examinations prior to the completion of 15 additional hours.
6. Prior to taking the preliminary examination, language examinations must be passed in two of the following languages: French, German, Russian. It is preferable that one of the languages be German.
7. A written preliminary examination must be passed in the major and minor fields prior to the completion of 96 hours beyond the bachelor's degree. Following this, an oral preliminary examination must be passed.
8. The student is admitted to candidacy for the Ph.D. degree after passing the preliminary examinations and satisfactorily completing 96 hours beyond the bachelor's degree.
9. An oral final examination is given to all candidates after completion of the research and dissertation.
10. All other requirements specified in the bulletin of the Graduate School must be met. These include requirements of residence, grade point average, and thesis procedures.

RESEARCH INTERESTS IN THE DEPARTMENT OF CHEMISTRY

Analytical Chemistry. Instrumental and classical analytical methods; inorganic and organic polarography; reaction mechanisms; millicoulometry; chromatography detectors; microanalysis.

Biochemistry. Structural analysis of polysaccharides; reaction mechanisms of carbohydrates; plant diseases.

Inorganic Chemistry. Preparation, stability, and reaction mechanisms of complexes; Lewis acid-base interactions in nonaqueous solvents.

Organic Chemistry. Organic reaction mechanisms and redox reactions; syntheses as applied to steroids; organic azides and small-ring heterocycles; cyclic ketones and hydrazides; folic acid analogues.

Physical Chemistry. *Ab initio* and semi-empirical quantum chemistry; adsorption, wetting, and kinetics in surface chemistry; electrochemistry; electrodeposition from thiocyanate-cyanide solutions.

COMMUNITY DEVELOPMENT

This curriculum is interdisciplinary. A candidate for the Master of Science degree in community development will take a portion of his work in related academic fields. Depending on his professional plans, it will be possible for him to minor in a field such as agriculture, anthropology, economics, education, geography, government, history, psychology, sociology. Undergraduate work in more than one of these fields is a desirable background for graduate study in community development. Students with inadequate backgrounds may be required to take certain courses to strengthen their preparation.

The period of study and training is planned to encompass one and one-half years. Included must be a minimum of 48 hours of graduate credit, plus a one-year internship in a local community-development program in southern Illinois. Only a limited number of interns can be enrolled in any one year.

The requirements for the Master of Science degree in community development include the following:

1. Twenty-eight to 32 hours in courses specifically designed or approved by the Community Development Institute, to include a thesis or research paper.
2. Sixteen to 20 hours of work in one or more allied fields, such as anthropology, education, psychology, sociology.
3. One year of part-time noncredit graduate internship. (This may be reduced or waived for exceptional students with one or more years of acceptable professional experience in community development work.)
4. Fulfillment of the requirements of the Graduate School.

DESIGN

The Department of Design attempts a generalized rather than a specialized design education. Through his undergraduate years the student is led to treat of man and his environment transactions in terms of whole systems rather than of isolated aspects or component parts. Emphasis is placed on the overall solutions to human problems which may be encompassed through design procedures.

The graduate program of the department continues this broad integrative approach but assumes that, at this level, the student should concentrate his studies in a more closely defined area within which he should work in depth.

It is recognized, however, within the present massive accelerations in the design possibilities of man's control over his environment, that the format of such graduate study should offer the utmost flexibility and capacity for change. The entire graduate program should be viewed as experimental in nature and one whose content and approach will be adjusted according to experience and field developments.

A two-year program of graduate study, leading to the Master of Science degree in design, is offered in the areas listed below. The program requires at least 34 hours of graduate study in the Department of Design; at least 18 hours of study outside the department, selected with the adviser; and 9 thesis hours. Specialized areas are (1) design in education, (2) communications in design, (3) industrial design, (4) environmental planning, and (5) generalized design science, directly oriented toward the design philosophy of R. Buckminster Fuller.

Within the structure of this program, graduates will work in an operational research and workteam organization rather than a formal classroom situation. There will also be the opportunity to participate in seminars and lectures given by distinguished visiting professors to the department and of conducting research under their guidance.

ECONOMICS

Graduate courses in economics may be taken as a major or minor leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees.

A student may complete requirements for the master's degree through the successful completion of: (a) 48 hours of graduate work, including the master's thesis; or (b) 96 hours of graduate work and successful completion of the preliminary doctoral examination. Each master's degree candidate is required to complete at least 33 hours in economics, including certain required courses.

Graduate students with no undergraduate deficiencies, with no language handicaps, and with no outside demands upon their time may find it possible (by taking the heavy graduate load of 16 hours each quarter) to complete the master's degree in three quarters (roughly nine months). *Most* students who have none of these deficiencies or demands upon their time take three quarters and a summer to complete their master's program. Students with undergraduate deficiencies (determined by the chairman of the Department of Economics), with language difficulties (especially foreign students), or outside demands upon their time should expect to take longer. Such students should plan to be in residence longer than the usual three or four quarters.

The Graduate Record Examination is required of all applicants for admission.

If a student wishes to combine his study of economics with the fields represented in the College of Liberal Arts and Sciences, he should apply for a Master of Arts degree. If he wishes to combine his study of economics with fields represented in the School of Business, the School of Agriculture, or similar schools, he should apply for a Master of Science degree.

A student may complete the requirements for the Doctor of Philosophy degree by taking these steps: (a) completing 48 hours of course work beyond the master's degree, or its equivalent; (b) passing a preliminary examination, usually given upon substantial completion of course work other than thesis; (c) passing the research-tools requirement; (d)

writing a satisfactory doctoral dissertation; and (e) passing the final examination.

The Ph.D. degree candidate may substitute an approved series of mathematics courses or an approved series of statistics courses for one of the two required foreign languages. A final proficiency examination must be successfully passed if the mathematics or statistics sequence is selected.

The preliminary examination will encompass: (a) certain "core" areas of economics; (b) the basic field of economic theory and its history; and (c) four additional "specialized fields" to be chosen from a list currently including international economics, labor, public finance, comparative systems, political economy, quantitative economics, money and banking, economic history and economic growth, and agricultural economics.

After a student has been granted admission to the Graduate School, he should contact the chairman of the Department of Economics. The chairman will refer him to the departmental supervisor of graduate students, who will act as his adviser (or temporarily delegate the task) until the student has chosen his thesis or dissertation topic and a member of the department has consented to direct the project. The thesis or dissertation director will then become the student's adviser and will function together with an advisory committee.

Information on graduate and research assistantships may be obtained from the chairman of the Department of Economics. More detailed descriptions of the M.A., M.S., and Ph.D. degree programs are also obtainable from the chairman.

EDUCATION

One may pursue a program of study leading to the Ph.D. degree in education through any one of three functional areas: curriculum and instruction; educational psychology; educational administration and social and philosophical foundations. Within the functional areas specific emphases are available depending upon the student's interests. For example, in educational psychology he may choose an emphasis in human learning, learning resources, measurement, or special education. In all programs, students must satisfy the general requirements of the Graduate School in addition to the special requirements for a Ph.D. degree in education.

APPLICATION

An applicant must submit, to the co-ordinator of the functional area in which he wishes to do his work, his scores from the Graduate Record Examination and the Miller Analogies test, and other pertinent data. Following review by that area's screening committee, the co-ordinator will inform him of the committee's decision.

ADVISEMENT

For each student, the co-ordinator of his functional area appoints an advisory committee consisting of a sponsor, who is in the student's functional area and who is authorized to direct doctoral dissertations, and two

other members, at least one of whom must be from outside the student's functional area. His tentative program, planned to include all of his graduate study, should be approved at a meeting of the student with his committee. One copy of the approved program is filed in the office of the executive officer for advanced graduate study in education. Appropriate program changes approved by the committee must be recorded on the student's record sheet in the executive office.

PROGRAM REQUIREMENTS

Each student must, during his first year beyond the master's degree or its equivalent, successfully complete one seminar in psychological foundations of education and one seminar in social and philosophical foundations of education. In certain functional areas specific courses may be required as part of a core program. Emphases within the functional area will be provided by specific courses and other experiences agreed upon by the student and his advisory committee.

PRELIMINARY EXAMINATIONS

When a student has passed the research-tools requirement and completed at least 36 hours beyond the master's degree or its equivalent, he may apply to the executive committee for advanced graduate study in education for permission to take the preliminary examination. The preliminary examination, which is written, will assess competencies in the general areas of psychological foundations, social and philosophical foundations, and research methodologies, and materials from the student's functional area. Preliminary examinations are conducted each year on the third Friday and Saturday in November, the first Friday and Saturday in March, and the third Friday and Saturday in July. Four four-hour examinations will be given each student. All must be successfully passed within three successive test periods. Three failures on any one of the examinations shall be cause for elimination of the student from the program.

DISSERTATION

The dissertation committee consists of the sponsor and at least three others appointed by the dean of the Graduate School on the recommendation of the area's co-ordinator through the executive officer. At least one member of the committee must be from a functional area other than that of the student and at least one must be from a related area other than professional education.

Satisfactory completion of the dissertation requirement includes the passing of an oral examination covering the dissertation and related areas.

ADMINISTRATION AND SUPERVISION

Graduate programs in this department lead to the Master of Science in Education degree and the Sixth-Year Specialist's Certificate. The internship in educational administration is offered. Concentrations in support of the Ph.D. degree in education are offered.

At the master's level, concentrations are offered in educational administration and in instructional supervision. Graduate courses taken in the department must follow the pattern of prerequisites for admission to courses.

Admission to master's degree work in the department must be approved by the department's admissions committee. The department's admissions requirements are available upon request to the chairman. Degree candidates' programs of courses must be approved by the appropriate adviser in the department. Transfer from unclassified status to the department will conform to Graduate School and department requirements for such transfer.

The specialist's program requires 45 hours of graduate study beyond the master's degree. The program includes a practicum, a field study, a minimum requirement in foundations, and a concentration upon an area of specialization. The department's admission requirements and program specifications are available upon request to the chairman. The areas of specialization, the practicum, and the field study are individually planned in terms of the candidate's professional goals. Programs are designed in harmony with standards of accreditation in professional education.

The internship is offered in support of graduate degree programs. Internship requirements and program specifications are available upon request to the chairman.

The department provides advanced courses and doctoral committee members for students pursuing the Ph.D. degree in education. Admission requirements and program specifications are available upon request.

EDUCATIONAL ADMINISTRATION

The program for the M.S. in Ed. degree, includes the following sequence of courses: Guidance 422b, Educational Administration and Supervision 500, 460, 424, and 535 or Elementary Education 557 or Secondary Education 564, and Educational Administration and Supervision 456. Eight hours of additional required courses may be elected from 420, 533, and 534. A comprehensive oral examination is required.

The Graduate School stresses the advantage of an academic field minor for the educational administration student. The department recommends an academic field minor for all candidates whose undergraduate degrees lack concentration in academic major and minor fields in the junior and senior levels of undergraduate courses. Students with strong undergraduate academic majors and minors will be encouraged to pursue a foundations minor. Students with strong academic and foundations backgrounds may be encouraged to pursue a minor in guidance. Since the master's degree requires 24 hours of credit at the 500 level, students should exercise caution in electing 400-level courses.

The required courses are listed above in the sequence which must be followed by majors. Exceptions must be approved by the chairman. Any unclassified student who hopes to be admitted to this department should request advisement from the department's adviser before enrolling in his first course as an unclassified graduate student.

INSTRUCTIONAL SUPERVISION

The program for the M.S. in Ed. degree includes the following sequence of courses: Guidance 422b, Educational Administration and Supervision 500, 460, Elementary Education 561, or Secondary Education 550, Educational Administration and Supervision 424, 456, 556, and 575b. A comprehensive oral examination is required. The regulations for the minor in instructional supervision parallel the regulations for the minor in educational administration.

THE SIXTH-YEAR SPECIALIST'S CERTIFICATE

Admission standards for the Sixth-Year Specialist's Certificate program parallel the admission requirements for the Ph.D. degree program, except that students admitted on a provisional basis must have the consent of the dean of the Graduate School. All candidates must have the master's degree or its equivalent. Prerequisites to this program include the required courses for the Master of Science in Education degree in educational administration which were omitted in the student's master's degree curriculum.

At least 16 hours in graduate courses will be taken in foundation fields of educational administration, at least 16 in the area of administrative specialization, at least 8 either in an internship or a practicum, and 5 in the field study.

The Sixth-Year Specialist's Certificate program will be designed by the candidate and his adviser subject to the approval of the advisory committee of the department. Specific courses and the sequence in which they are to be taken must be approved by the advisory committee.

The department requires a comprehensive written examination as the final step toward the sixth-year program.

ELEMENTARY EDUCATION

Graduate programs in the Department of Elementary Education lead to the Master of Science in Education degree, and the specialist's certificate, and contribute to the Ph.D. degree program in education.

The graduate majors in elementary education and in early childhood education for the Master of Science in Education degree consists of a total of 48 hours. Programs have been developed for prospective elementary principals and elementary supervisors. Programs have also been developed for teachers who wish to specialize somewhat in one of the following areas: language arts, reading, social studies, elementary mathematics, elementary science.

Each of the above programs includes certain required courses, guided electives, and related courses in liberal arts. All programs must be planned with and approved by the graduate advisers in elementary education or in early childhood education. Specific course requirements for a given program may be obtained upon request from the Department of Elementary Education.

Students in early-childhood education who have not had psychology

or Guidance 412, Sociology 427, Health Education 312, or the equivalent of one of these, are required to take four hours in psychology or guidance. Educational Administration and Supervision 554 or 555 or the equivalent is required.

RULES RELATING TO THE MASTER'S DEGREE

1. In lieu of a thesis, all students are required to take Guidance 422 or its equivalent and Educational Administration and Supervision 500.
2. A total of from eight to twelve hours should be selected from departments outside of the College of Education.
3. At least twenty-four hours must be on the 500 level.
4. Those who have undergraduate degrees in other fields, regardless of teaching experience, are required to complete, without graduate credit, at least four hours of elementary methods (314 or equivalent) and eight hours of elementary student teaching. The teaching must be done in residence at a university or college approved by the American Association of Colleges of Teacher Education.
5. Any student taking graduate courses without first being approved by his adviser risks having work not accepted for the degree.

The specialist's certificate follows a sixth-year program requiring 45 quarter hours of work. The program is individually planned to meet the student's professional objectives. Part of the program includes a project which shows the ability to conduct individual investigation.

The Doctor of Philosophy degree in education with a major in curriculum and instruction with emphasis in elementary education requires 96 hours beyond the master's degree. The applicant is approved only after passing the qualifying examination of the College of Education. The tools of research required by the department include one foreign language and statistics. Required also are completion of the preliminary examinations of the College of Education and the dissertation. The program is individually planned to meet the professional needs of the student. Opportunities are available for a strong subject matter minor if one is interested, for instance in a special subject matter field in the elementary school. Write to the chairman of the Department of Elementary Education for detailed requirements.

ENGLISH

Graduate courses in English may be taken for a major or minor in the Master of Arts program, for a major in the Master of Arts in English as a Foreign Language program, for the subject-matter major in the Master of Science in Education program, and for the Doctor of Philosophy degree. Inquiries about admission to graduate study in English should be sent to the Director of Graduate Studies in English, Department of English, Southern Illinois University, Carbondale, Illinois 62903.

For the M.A. degree in English, the student must satisfy the following requirements:

1. Complete at least 48 hours of satisfactory graduate work.

2. Take English 500 in the first term it is available to him.
3. Fulfill the linguistics requirement by taking English 400, 403, or 501.
4. Submit to the Director a clean copy of that research paper which best represents his abilities and accomplishments.
5. Pass the Master's Comprehensive Examination on the major texts of English and American literature.

For the M.A. degree in English as a foreign language, the student must satisfy the following requirements:

1. Take 28 hours of linguistics: English 400, 405a, 405b, 504, 505; Anthropology 401, 413.
2. Take 20 additional hours including English 488, 569; Guidance 422.
3. Pass a written comprehensive examination.
4. Submit to the chairman of the EFL program a paper which may take the form of instructional materials for teaching English as a foreign language.

For the Ph.D. degree in English, the student must satisfy the following requirements:

1. Complete at least 48 hours of satisfactory course work beyond the master's degree, or its equivalent.
2. Present evidence of competence in two foreign languages, normally French and German.
3. Pass preliminary examinations in English and American literature.
4. Submit a satisfactory dissertation.
5. Pass the final oral examination.

FOREIGN LANGUAGES

For the Master of Arts and Master of Science in Education degrees, majors and minors are offered in French, German, and Spanish. A minor may be taken in Russian.

Students who wish eventually to qualify for graduate work leading to the Doctor of Philosophy degree are required to write a master's thesis. Those who substitute courses (6 hours) for the master's thesis (on the recommendation of the graduate committee of the department subject to the approval of the dean of the Graduate School) must take a written (in addition to an oral) examination in the literature of their speciality. For all candidates for the Master of Arts degree, part of the oral examination will be conducted in the language of their speciality.

For the Master of Science in Education degree, Romance Philology 410 is required for students in French or Spanish. For the Master of Arts degree, Romance Philology 410 and either French or Spanish 515 are required. All romance philology courses may be counted toward either French or Spanish specializations.

Normally the bachelor's degree and a minimum of 27 hours in courses on the junior-senior level, or the equivalent, constitute the prerequisite for registration in graduate courses. However, students who do not meet this requirement may register for specific graduate courses

with the consent of the instructor and the authorization of either the chairman of the department or the chairman of the graduate committee of the department.

FORESTRY

The Department of Forestry offers major work for the Master of Science degree. Some work in other departments is recommended, the amount varying with the individual student's objectives.

In forestry research or teaching, graduate work is essential. It also leads to a higher grade classification than that of the bachelor's graduate on entrance into federal employment.

Forestry courses are available to students in the general conservation field.

GEOGRAPHY

The Department of Geography offers programs leading to the Master of Arts, Master of Science, Master of Science in Education, and Doctor of Philosophy degrees.

Although the relatively large staff allows a wide range of graduate courses, overlapping and interrelated interests of staff members enable particularly strong programs at both the master's and Ph.D. levels in several fields. Most important of these programs at present are in urban geography, industrial and transport geography; planning; cultural geography; climatology; the geography of land and water resources; and the geography of Anglo-America.

Students planning to minor in geography should consult with the department chairman to block out an acceptable program.

MASTER'S DEGREES

An entering graduate student need not have an undergraduate major in geography, but he should have had at least one course in each of its major aspects: physical, economic, cultural, and regional. Each entering graduate student is required to take an entrance examination, covering these divisions of geography, which is regarded as a diagnostic test expected to provide a measure of the student's background and to point up strengths and weaknesses that will be considered in planning his graduate program. Students with deficiencies will be asked to make them up by taking undergraduate courses or special readings courses.

A thesis is required of all master's degree candidates who major in geography.

For either the Master of Arts or Master of Science in Education degree, a student must give evidence of a reading competence in one modern foreign language, preferably French, German, or Russian. This can be accomplished either by successful completion of a year of college-level language courses or by passing a reading examination. For the Master of Science degree, evidence of competence in quantitative techniques is required instead of the language.

Course work centers around a basic core of courses dealing with geographic literature and thought, and the essential techniques used by geographers—field methods, library and writing techniques, and cartographic and quantitative representation. This core, including 410, 500, 501, and 515, totals 15 hours. The remainder of the graduate student's program is tailored to his interests within the resources of the department and other co-operating departments.

Candidates for the Master of Arts or Master of Science degree may or may not present a minor. Candidates for the Master of Science in Education degree must work out a program acceptable to the College of Education. For any graduate degree, students without a minor may receive credit toward their degrees in geography for courses in other departments approved by their advisers.

Within the regular geography program, students interested in planning are able to take advantage of a specialty in planning, developed in co-operation with the departments of government, economics, sociology, and the Community Development Institute. Such students may take courses related to planning in co-operating departments and in special inter-departmental arrangements. Furthermore, an internship plan allows these students to spend a summer as employees of local governmental planning agencies.

The normal load is 12 hours per quarter. Although the 48 hours required for graduation can be accomplished in four quarters, the department suggests that students think of six quarters as the time normally required to complete the master's degree. This longer time allows the student to complete a richer program and to spend adequate time in writing the thesis.

Before formally beginning thesis work and not sooner than two quarters after entering the master's program, the student must take a comprehensive examination covering the general field of geography. Upon successful completion of this examination he may begin his thesis.

An oral defense of the thesis is the final requirement.

DOCTOR OF PHILOSOPHY DEGREE

In addition to the Ph.D. degree requirements of the Graduate School, the department expects a would-be doctoral student to have a master's degree or its equivalent and to be able to demonstrate competence in the field of geography. Incoming students take a diagnostic examination covering the following subjects: (1) basic geographic techniques, (2) physical geography with emphasis on landforms and climatology, (3) two of the following specialties within economic geography: agricultural geography, industrial geography, urban geography, and trade and transportation, and (4) two of the following phases of cultural geography: population geography, political geography, and historical geography. Deficiencies indicated by the examination are to be remedied as prescribed by the staff. A program of study will be worked out between the individual student and his adviser with the approval of the staff. This program will be reviewed each quarter.

Students should understand that completion of the minimum of 48 hours does not necessarily suffice for the completion of course work requirements. The true measure is professional competence.

After the student has completed all or nearly all of his formal course requirements he will be assigned an individual research problem devised by the staff. The student will be expected to do the research and prepare a professional report on the problem within a two-week period without staff guidance or assistance. Upon review of the report by the staff the student will undergo an oral examination by the staff on his field problem, report, and fields of specialization.

Upon successful completion of the field problem and examination and all other prerequisites, the student is admitted to formal candidacy for the doctorate. A dissertation topic and prospectus are then submitted, and, upon approval of the topic by the staff, a thesis advisory committee is selected.

A completed dissertation is approved by the thesis advisory committee and an examining committee appointed by the dean of the Graduate School. The student will make an oral defense of his thesis before the examining committee.

GEOLOGY

The Department of Geology offers programs leading to the Master of Arts and Master of Science degrees. Appropriate programs are given for a minor related to anthropology, geography, zoology, and soils. Preparation for teaching earth science at the high school level is undertaken in co-operation with the College of Education and other science departments.

The department co-operates with an All-University program to prepare students for work in the areas of conservation, recreation and outdoor education, and natural science; a major or minor in geology directed toward this end may be obtained.

The aim of the master's program is to give the student competence in the basic fields of geology stressing field mapping, petrology, paleontology, stratigraphy, geomorphology, and mineral deposits, including petroleum. Specialization is encouraged only after this proficiency is attained.

The master's candidate must give evidence of competence in the basic sciences through formal courses or proficiency examinations. Reading knowledge of a foreign language is required at least to the equivalent of one year of college-level study.

Before undertaking the thesis a general examination, written or oral, is given; the master's oral examination is then concerned primarily with defense of the thesis.

Southern Illinois and adjacent areas offer a wide range of geological conditions ideal for class and individual study and research. Staff members are engaged in continuing study of the region and encourage participation by qualified students. The Illinois Geological Survey actively supports the work in Illinois.

GOVERNMENT

Graduate courses in government may be taken as a major or minor leading to the Master of Arts degree, as a part of the social studies major toward the Master of Science in Education degree, and as a major leading to the Doctor of Philosophy degree. Graduate students are required to take 499.

A minor is available on the doctoral level in all areas where a major is available on the master's level. A student is to select his minor only with the approval of his doctoral advisory committee.

GUIDANCE

Majors in the areas of guidance and counseling for elementary and secondary school lead to the M.S. in Ed. degree or to the Specialist's Certificate. The master's degree program requires 60 hours. The master's degree in educational psychology is also available.

GUIDANCE AND COUNSELING FOR SECONDARY SCHOOLS, *M.S. in Ed.*

The secondary guidance program is a series of courses intended to convey the complexity of adolescent behavior, and to prepare guidance workers to assist adolescents with personal, academic, and vocational problems. Prerequisites are Guidance 305-4 and 422a-4. The first course should be 442-4, which may be taken concurrently with 422b-4 and 562a-4. Guidance 562b-4 and Psychology 440-4 should follow 562a; 422c-4 or Psychology 421-4 should follow 422b and should be followed by Psychology 547-2 and Guidance 537-4 (which should not precede but may be concurrent with Psychology 547). Guidance 575c-4 must follow 537-4 and must be taken for 2 hours in each of two separate quarters.

Guidance 541-4 and 543-4 need only to follow 442-4. 545j-4 should be the last course or in the last quarter of courses taken for the degree.

Psychology 440-4, 465-4, and Sociology 426-4 are defined as a behavioral science option. If these courses cannot be taken, due to scheduling problems, a suitable course substitute in the same area will be approved.

GUIDANCE AND COUNSELING FOR ELEMENTARY SCHOOLS, *M.S. in Ed.*

This program is intended to train workers to assist parents and teachers with problems their children present.

Prerequisites are Guidance 305-4 and 422a-4. The first course should be 422a-4, which may be taken concurrently with 422b-4 and 562a-4. Psychology 440-4 and Special Education 412-4 should follow 562a; 422c or Psychology 421-4 should follow 422b and should be followed by 537-4 and 525-4 (which should not precede but may be concurrent with 537). Guidance 575b-4 must follow 537 and must be taken for 2 hours in each of two separate quarters. 536a-4 should follow 422c-4 or Psychology 421-4. 526-4 must follow 525-4. 541-4 and 543-4 need only to follow 442. 545j-4 should be the last course or in the last quarter of courses taken for the degree.

EDUCATIONAL PSYCHOLOGY, M.S. in Ed.

The objectives of this research-oriented program are to produce school research workers and to prepare people for subsequent work leading to the Ph.D. degree.

Prerequisites are the following courses, or their equivalents: Psychology 201, 211 or 420, 301 or 212 or 303, 432 or Guidance 412, Guidance 305 & 422-8.

A typical program might include the following courses in the order listed: Psychology 401, Guidance 422c, 511, Psychology 402, Guidance 520a, Educational Administration and Supervision 554, 4 hours for a thesis, Psychology 403, Guidance 515, plus three courses selected from Psychology 404, 406, 408, 420, 440, 451, Guidance 442, 520b, 535, 536, 537, 562-4, 4 to 8 hours of thesis, Educational Administration and Supervision 460 or Elementary Education 461 or Secondary Education 550, Educational Administration and Supervision 456.

CERTIFICATE OF SPECIALIST

The objective of this individually advised program is to extend competencies gained at the master's degree level. Normally 48 hours of coursework beyond the M.S. in Ed. degree in guidance shall be outlined for each student at the beginning of his program. As many as 9 hours may be earned in a field study if this is deemed advisable.

Recommended courses are Guidance 538, 539, 525, 526, 520-8, 596, 536-8, a practicum, and 16 hours of electives outside of guidance.

HEALTH EDUCATION

Master of Science in Education degree programs are offered in health education. The candidate may select from three areas of concentration: school health education, community health education, and safety education. In school health and safety education, two programs may be followed: (1) a minimum of 24 hours in health education, a minimum of 16 hours in a minor field, and 8 hours, with departmental approval, from other graduate courses in the University, (2) a maximum of 40 hours in health education and 8 hours from offerings in the field of education having departmental approval.

The program in community health education extends over four quarters of study with 60 quarter hours required for the degree. Required courses for the degree in community health are 488, 489, 500, 511, 533-12, 590, Food and Nutrition 404, Radio-Television 367, and Journalism 393.

Qualified candidates wishing to pursue a program leading to the Ph.D. degree in education with some work in health education will receive individual guidance from the department.

HIGHER EDUCATION

The Department of Higher Education offers programs leading to the Master of Science in Education degree and courses contributing to the Ph.D. degree in education.

The general goal of the department is a program: (1) to interest and instruct college graduates in the college teaching profession and its problems, (2) to interest and instruct college graduates in the field of college administration, (3) to interest and instruct college graduates in the field of college student personnel work, (4) to analyze and call attention to historical and current problems, issues, and opportunities in higher education.

The program in college student personnel work is a two-year course of study with a balance of theory and practice. Graduates receive a Master of Science in Education degree (72 quarter hours) plus a full academic year of experience in student personnel work with both women and men. The student plans his experience, in co-operation with his adviser, within the following framework: (1) courses in the major field including theory and supervised experiences, (2) courses in the foundation fields of higher education including theory, philosophy, problems, curriculum, finance, and administration and of human behavior including personality theory, psychopathology, learning theory, group dynamics, counseling theory, and psychological measurement, and (3) courses in elective areas of professional education or the traditional academic disciplines to strengthen the student's college teaching or other professional needs.

Admission to the program is by Selection Committee. Qualifications for admission include a bachelor's degree, a *B* average or better in undergraduate study, and personal qualities to live with students as an adviser and counselor.

Room, board, and tuition are offered for service as a residence hall fellow. Fellowship funds of \$80 per month are available for students accepted with a *B* average or above. Especially for married students, a limited number of graduate assistantships at \$180 per month and tuition are available through the Student Affairs Office.

For further information on the program in college student personnel, address inquiries to Co-ordinator, College Student Personnel Graduate Studies Program, Department of Higher Education.

Work contributing to the Ph.D. degree program in education is offered by the Department of Higher Education in the following specialized areas: general administration, business affairs administration, and student personnel administration.

HISTORY

History may be chosen as a major for the Master of Arts degree and as part of a social studies major for the Master of Science in Education degree. In either case a minimum of 32 quarter hours (of the 48 hours required for the degree) of appropriate history credit is required. At least 16 of the required 32 hours must be taken in courses on the 500 level, the remainder on the 400 level. Candidates for the Master of Arts degree are required to present a thesis (5 to 9 quarter hours) and must pass a reading examination given by the Department of Foreign Languages in a modern foreign language. They must also pass an oral ex-

amination in history after the thesis has been accepted. The thesis is optional for Master of Science in Education degree candidates, and there is no language requirement for that degree. All candidates for either degree should consult the department chairman or his representative before enrolling for courses. When a student has been assigned to a department member to write his thesis, that person becomes his adviser. The department believes that programs should be planned in the light of the student's previous studies, and it discourages undue specialization.

HOME ECONOMICS

The Master of Science and Master of Science in Education degrees with a major in home economics are available with specialization in clothing and textiles (including interior design), food and nutrition, family economics, home management and equipment, family relations, child development, and home economics education. Work toward the Ph.D. degree is available in home economics. The Letitia Walsh award-loan of \$5,000 is available for Ph.D. candidates in home economics.

Prerequisites for Admission to Advanced Graduate Study

1. Admission to the Graduate School. (Refer to Chapter 1.)
2. Completion of a curriculum in home economics or in a related field such as biological, physical, and social sciences, art, business, and/or communications. When necessary, deficiencies may be made up concurrently.
3. Satisfactory scores on the Graduate Record Examination are required.
4. Unconditional admission is granted to students whose undergraduate averages are equivalent to 3.5 and above and whose scholastic record in the chosen field of concentration indicates ability to pursue advanced study. Conditional admission may be granted where the average is above 3.2, but below 3.5.
5. Demonstrated ability to write effectively as indicated by scores in English composition or by written composition under the supervision of a departmental representative. In the case of foreign students an official statement showing sufficient proficiency in English is required.
6. The student attains full graduate standing in home economics when he has met the above requirements and has made satisfactory scores on the Ohio State Psychological Examination.

Prerequisites for Admission to Advanced Graduate Study

1. Prerequisites 1, 2, and 5 as listed above.
2. Recommendations from three or four former teachers or supervisors whose names the student has submitted.
3. Satisfactory scores on the Graduate Record Examination must accompany the application for admission.
4. Unconditional admission is granted to a student whose undergraduate average is 4.50 or above and whose scholastic record in the chosen field of concentration indicates ability to pursue advanced study. Con-

ditional admission may be granted where the average is not below 4.25.

INDUSTRIAL EDUCATION

Graduate students may elect industrial education as a major or minor for the Master of Science or Master of Science in Education degree. Advanced study beyond the master's degree is also provided in connection with the minor of a Ph.D. degree, the major of which is in another field.

INSTRUCTIONAL MATERIALS

Graduate courses in instructional materials may be taken for a major toward the Master of Science in Education degree. They may be taken also as a minor in library service or as a minor in audio-visual education toward the Master of Science in Education degree.

The graduate major in instructional materials, toward a Master of Science in Education degree, involves professional training in both audio-visual education and school library service. It meets the state and national certification standards for full-time school librarians and the standards recommended by the Department of Audio-Visual Instruction of the National Education Association. In Illinois, every school librarian is also required to have a teaching certificate.

Fifty-two hours are required for the major. No minor is required. At least 26 hours must be in courses numbered 500 or above. The following courses are required: 403, 405, 406, 417, 420, 445, 510, 514, 546, 554, 599, and 12 hours from 440, 450, 457, 458, 470, 530, 547, 548, 549, 560, and 576.

A minor in instructional materials toward the Ph.D. degree can be obtained through a proper choice of electives.

The minor in school library service is offered for students taking a major in another area. This minor, consisting of a minimum of 15 hours, is intended primarily for teachers who wish to obtain an appreciation of literature for children and adolescents. It is not intended for the preparation of professional school librarians. The following courses are required: 405, 406, 514, and at least 3 hours from 420, 510, 530, and 576.

The minor in audio-visual education is also offered for students taking a major in another area. This minor is intended primarily to prepare audio-visual directors and co-ordinators. It meets the certification recommendations of the state and national audio-visual organizations. The following courses are required: 417, 546, 548, and at least 3 hours from 440, 445, 457, 458, 547, 549, 560, and 576.

For further information on planning major and minor programs, work experiences, job opportunities, or other related matters, consult the Chairman, Department of Instructional Materials.

INTER-AMERICAN STUDIES

Course work in the inter-American studies program is offered by the departments of Anthropology, Economics, Foreign Languages, Geography, Government, and History.

Prerequisites for the Master of Arts degree include a command of the Spanish language adequate to meet the student's needs for research and communication within the area of his program. The director of the Latin American Institute and the supervisory committee will determine the student's linguistic competence on registration and, where necessary, specify what the student must do to improve his proficiency in Spanish. Whenever the student's program involves the need for Portuguese or French, he will also need to demonstrate or attain satisfactory proficiency in that language. In addition, a satisfactory basic preparation in inter-American studies is required.

REQUIREMENTS FOR THE MASTER OF ARTS DEGREE:

1. The completion of an area of concentration of at least thirty hours of courses acceptable for graduate credit, in one of the above listed departments.
2. The completion of a minimum of eighteen hours of related studies approved by the student's supervisory committee which will meet the requirement for a minor in the Latin American Institute. A maximum of three areas is permitted in the minor field of concentration.
3. The completion of a satisfactory thesis on a Latin American topic in the area of concentration for which five to nine hours of credit are given.

A minor in inter-American studies for those students with a major in a department outside of the institute will consist of a minimum of eighteen hours to be taken in two of the participating departments. Specific course programs will be worked out by the director of the institute, in consultation with the chairmen of the departments involved.

In every case the student's final program must be approved by the graduate supervisory committee, acting under policies established by the Latin American Institute and the Graduate School.

JOURNALISM

Courses in journalism leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees are offered by the Department of Journalism. Candidates for a master's degree must complete 48 hours of graduate work (half in professional journalism courses, the remainder in courses in the liberal arts) including a thesis demonstrating a capacity for investigation and independent thought.

Each doctoral program is designed to fit the needs of the individual while satisfying requirements of the Department of Journalism and the Graduate School. Among minimum requirements are 96 hours of graduate-level courses beyond the bachelor's degree, to include a minimum of 36 hours of advanced journalism courses and 24 hours each in two other approved related fields. Doctoral students will be examined over their three academic areas of concentration, write a dissertation, and meet all requirements of the Graduate School.

MATHEMATICS

Graduate work in mathematics may be taken as a major or minor leading to the Master of Arts, Master of Science, or Master of Science in Education degree. For a major, the Master of Arts degree requires a thesis, and the Master of Science degree requires a special research paper. For both of these degrees there must be a *B* average in the major courses as well as a *B* average in all graduate work, and the candidate must demonstrate a reading knowledge of French, German, or Russian by passing a special examination given by the Department of Foreign Languages. Both written and oral comprehensive examinations are required. The following course requirements for the M.A. or M.S. degree must be satisfied: 501-6, 520-8, 556-6, 433, and 530 or 501c.

Current and prospective high school teachers may become candidates for the Master of Science in Education degree. A special paper in mathematics, together with certain specifications in both education and mathematics courses, is required, but there is no foreign language requirement. For further information, consult the Department of Mathematics.

MICROBIOLOGY

Graduate courses in microbiology may be taken as a major or minor leading to the Master of Arts and Master of Science degrees, or as a part of a biological sciences program leading to the Master of Arts, Master of Science, and Master of Science in Education degrees.

The Doctor of Philosophy degree in microbiology will be awarded to a candidate in recognition of achievement in independent research and in advanced studies. His original contribution to knowledge, evidenced in the dissertation, together with a superior comprehensive scholarship record and satisfactory completion of prescribed examinations are the criteria for the degree. Emphasis will be placed on his critical evaluation of, and familiarity, with the existent developments in microbiology and related areas of study.

The Department of Microbiology and the Biological Research Laboratory offer facilities for research in microbial genetics, cytology, radiation biology, physiology, and biochemistry of microorganisms, medical microbiology, immunology, and virology. In addition to the library facilities, reprint collections covering many topics in microbiology are available for student use.

To be eligible for the Ph.D. degree, the student must satisfy the following requirements. (1) He must complete at least 144 hours of graduate work and research. Credit for research may not exceed 60 out of the 144 hours. (2) He must demonstrate his proficiency in statistics and his ability to read, with reasonable facility, scientific literature in two modern languages. (3) He must pass the qualifying examination and a final oral examination. (4) He must submit an approved dissertation based on his research.

A minor may be elected as part of a doctoral program in microbiology, subject to approval of the department, from courses in any program which constitute a major for the master's degree. A minor in microbiology for the doctorate in another biological science consists of general microbiology and 20 hours selected from courses offered and approved by the department.

MUSIC

Candidates for the M.M. or M.M.E. degree or the Ph.D. degree in education who wish to choose applied music courses as electives will take the 400-series course in their major instrument or voice for 2 hours per quarter. Applied music majors in the M.M. curriculum will take the 500-series course in their major instrument or voice for 4 hours per quarter. These are artist-level courses, and admission to them and to the degree program must be obtained from the chairman of the department after passing a jury placement examination.

MASTER OF MUSIC DEGREE

Requirements include 18 hours in a major area (history-literature, theory-composition, or applied music), Music 501-3, 502-9, 599-3 to 9 (thesis), and electives in music to make a total of 48 hours.

In addition, each applied music candidate must present a recital without additional credit and prepare a paper related to the literature performed on the recital. Maximum credit allowed the applied music candidate for the thesis is 3 hours.

MASTER OF MUSIC EDUCATION DEGREE

A minimum of 12 hours must be in music education courses; a maximum of 8 hours may be elected in professional education courses in consultation with the adviser. Other requirements include 18 hours in a major area, Music 501-3, 502-9, 503-3 (by advisement), 599-9 (thesis, or 8 hours of course work as approved by the student's advisory committee), and electives in music to make a total of 48 hours. At least two quarters of ensemble experience are required.

DOCTOR OF PHILOSOPHY DEGREE

This doctoral program, in education, consists basically of 96 hours, including 30 in general education (curriculum and instruction), 30 in music education and/or general music courses, and 36 in dissertation. Specific courses depend upon individual needs and will be determined through consultations with the student's program committee. The dissertation may be in the field of music education but should demonstrate general educational research techniques. To be admitted to this program, a candidate must have earned a 4.5 grade at the master's level in music (5.0 corresponds to a grade of A) and must score 50% or above in the Miller Analogy test. Application for admittance to this program may be made through either the College of Education or the Department of Music.

In both the 400 and the 500 series of courses the emphasis is placed upon the literature of the instrument or voice with the assumption that the learning of techniques will have largely been mastered at the undergraduate level.

For specific repertoire requirements in each course see the Applied Music Appendix of the Department of Music.

PHILOSOPHY

The Department of Philosophy offers graduate work leading to the Master of Arts and Doctor of Philosophy degrees. Graduate courses in philosophy may be used also as a minor in programs leading to the Master of Arts or Master of Science in Education degree. Students who do not plan to continue work in philosophy beyond the master's level are encouraged to elect a graduate minor or to combine philosophy with another subject in a 60-hour double major.

The department expects an applicant for admission to its graduate program to have had at least 24 hours' work in philosophy or closely related theoretical subjects, including at least one quarter in ethics, one in logic, and a year in the history of philosophy. The department may waive a portion of this credit requirement in favor of maturity and of quality and breadth of academic experience. The applicant will be required to make up serious background deficiencies by taking appropriate undergraduate philosophy courses without credit.

The Department of Philosophy requires the candidate for a master's degree to present a thesis, for which 9 hours of credit are allowed. He must pass two examinations: a written examination covering the nature and proffered solutions of the persistent problems of philosophy as dealt with by major philosophers from Thales to the present and an oral examination devoted chiefly to the thesis. In the written examination emphasis will be placed on such classical figures as Plato, Aristotle, Descartes, Spinoza, and Kant, but the student will be expected to answer questions involving at least two recent philosophers one of whom will be an American.

A reading knowledge of one foreign language, usually French or German (indicated by successful completion of a year's work in the language in college or by special examination) is required of each candidate. The student who expects later to enroll in the Doctor of Philosophy degree program in philosophy is urged to take the language examination required in that program.

Applicants for the Doctor of Philosophy degree in philosophy should submit with their application forms scores for the Graduate Record Examination. The department may, where other evidence of competence seems so to warrant, accept a candidate upon the condition that he later submit acceptable scores.

At the time of his acceptance in the program the student will be assigned an advisory committee who will help him plan a program of study designed to prepare him for admission to candidacy. After the student has accumulated at least 36 hours of credit beyond the master's

degree, and before he begins work on the dissertation, he must take a written preliminary examination on the thought of one major figure in the history of philosophy and in the following four areas: history of philosophy; logic, methodology, and philosophy of science; metaphysics and theory of knowledge; and value studies.

Before he is allowed to take the preliminary examination the student must have demonstrated reading proficiency in two foreign languages.

After he has passed his language examinations and the preliminary examination and has completed 48 hours of work beyond the master's degree, the student is admitted to candidacy and assigned a doctoral dissertation committee which will supervise the research and writing leading to the dissertation. After the dissertation has been accepted by the committee, the student is given an oral examination on the dissertation and related topics.

The department has available each year a number of assistantships for qualified graduate students. Applications for these assistantships should be sent to the department before February 15 of the scholastic year preceding that for which the application is made. An effort is made to give every candidate for the doctor's degree supervised experience in teaching elementary work in the field of philosophy.

PHYSICAL EDUCATION

Graduate courses in physical education may be taken as a major or minor toward the Master of Science in Education degree or the Doctor of Philosophy degree.

MASTER'S DEGREE

The departmental requirements for unconditional admission as a master's degree candidate are:

1. Fulfillment of the requirements for admission to the Graduate School;
2. Presentation of at least an undergraduate minor (preferably a major) in physical education;
3. Presentation of an overall undergraduate average of 3.5 or better;
4. Presentation of at least one undergraduate course in anatomy, physiology, or kinesiology and at least one in educational psychology or psychology of the particular field of the student's specialty, (such as adolescent psychology); and
5. Possession of the ability to teach and demonstrate an acceptable variety of physical education activity skills and techniques.

A student may be conditionally admitted to the program and be permitted to do graduate course work while he removes deficiencies.

Physical education courses required of all majors and minors are 500, 501, 502, 503, and 504. Certain other courses may be required to remedy weakness in a student's background preparation.

Requests for transfer of credit from other institutions will be considered only before admittance into this program.

This program is made up of 20–32 hours of required courses in physical education, 0–12 hours of elective courses in physical education, and 16 hours either in a minor area or in several fields, with no attempt being made to achieve a minor in any one field.

Minor

Students majoring in a related area may minor in physical education. The minor consists of 16 hours, including 501, 502, and 503. For students who have not had adequate courses in tests and measurements and in principles of physical education, 400 and 406 are also required.

DOCTOR OF PHILOSOPHY DEGREE

One may pursue a program of study leading to a Ph.D. degree in education through any one of three functional areas: curriculum and instruction, educational psychology, or administration and social foundations. Within the functional areas specific emphases are available in physical education.

The departmental qualifications for admission to advanced graduate study are:

1. Fulfillment of the requirements of the Graduate School and the College of Education;
2. Presentation of professional course work equivalent to Southern Illinois University's undergraduate and master's programs in physical education; and
3. Achievement of a satisfactory score on the Graduate Record Examination advanced test in physical education.

A student may be permitted to start advanced graduate work while making up deficiencies.

Three years of full-time graduate study after obtaining a bachelor's degree or two years of full-time graduate study after a master's degree (or its equivalent) constitute the minimum requirement for the doctorate. The student and his adviser will determine a pattern of course work to equip the student in physical education and its allied fields, foundations of education, cultural courses outside the area of education, and for independent research.

The program of studies beyond the master's degree must include a minimum of 96 hours of approved graduate courses of which 60 hours must be in courses on the 500 level or above. Of these, 36 must be in Dissertation 600. Any dissertation credit beyond 36 hours may not be included as part of the 96-hour requirement. Additional work beyond the 96 hours may be required to insure professional competence and broad cultural knowledge.

Competence in two foreign languages, the selection of which shall be approved by his adviser, or in one foreign language and statistics, similarly approved, is required.

The procedure for beginning a program of study leading to a Ph.D. degree is as follows:

1. Submit an application for admission, with transcript or transcripts, to the Graduate School.
2. Submit transcripts to the Department of Physical Education.
3. Present acceptable professional recommendations to the Departments of Physical Education. If the transcripts and recommendations are acceptable, the departments will appoint an adviser for the student.
4. Initiate a meeting with the appointed adviser to work out a program of study.

PHYSICS

Graduate work in physics may be taken as a major or minor leading to the Master of Arts or Master of Science degree, or as part of a physical sciences program toward the Master of Science degree. Research is in progress in solid-state physics, in cosmic rays, in theoretical physics, and in nuclear spectroscopy. Research equipment now available includes two multichannel analyzers, various sodium iodide crystals (including one 8 inches in diameter), a Beckman DK-2A spectrophotometer, several furnaces, and accessory electrical equipment for work in solid-state physics. An electron microscope and several IBM computers are available on the campus.

Each candidate for a master's degree in physics must take 501-15 and write a thesis in one of the fields of research mentioned above. The remaining 24 hours of required graduate credit will be obtained by completing certain of the following electives, at least 6 hours of which must be in physics: 404, 405, 413, 414, 450, 511, 531; Mathematics 452, 480, 501, and 555.

Required courses for the physical sciences program are 405, 413, and 420 which have as prerequisites 301 and 305.

PHYSIOLOGY

Graduate courses in physiology may be taken as a major toward the Master of Arts, Master of Science, Master of Science in Education, and Doctor of Philosophy degrees, and as a minor toward the Master of Arts and Master of Science degrees. Graduate courses in physiology also may contribute to a major in biological sciences toward the M.S. degree, and to one in biological sciences in education toward the M.S. in Ed. degree.

The graduate prerequisites at the master's level include the equivalent of an undergraduate major in biological sciences plus inorganic, analytic, and organic chemistry and a minimum of one full year each of physics and mathematics.

For a master's degree in physiology, a student must ordinarily work two years and present an acceptable thesis based upon original investigation. Equivalent work completed elsewhere can be accepted in part.

Courses should be elected from other departments such that a major of about 32 hours and a minor of about 16 hours are attained. Because of the importance of biochemical and biophysical knowledge to physi-

ology, students are urged to select their minors in those areas. Other biological sciences are also acceptable, after consultation with the chairman of the department.

Training is provided in cellular, comparative, and mammalian physiology. Because of this trichotomy, entering students are urged first to obtain a basic knowledge of the whole field and then to specialize in one of the three areas after being advised by their major professor in conjunction with the chairman of the department.

Students entering the doctoral program should ordinarily have at least the same prerequisites as those entering a master's program, except that courses in calculus and physical chemistry are highly recommended. Students with prior majors in chemistry or physics, but little training in biological sciences, are equally eligible for admission to the program.

Three years of full-time graduate study after obtaining the bachelor's degree, or two years after the master's degree (or its equivalent) constitute the minimum requirements for the doctorate.

A competence in one foreign language which has been selected by the student and his adviser plus Mathematics 410-12 (statistical analysis) are necessary for admission to doctoral candidacy. In addition, if they or their equivalents have not been previously taken, Chemistry 451-11 (biochemistry), and 460 (theoretical chemistry) or else 461-12 (physical chemistry) are also necessary before admission to candidacy.

The total program should be formulated upon entrance in consultation with the adviser.

PLANT INDUSTRIES

The Master of Science degree can be earned in the Department of Plant Industries in the general fields of soils, field crops, and horticulture. Graduate courses in plant industries may also be taken for a M.S. degree minor.

It is customary to require supporting courses in botany, microbiology, chemistry, statistics, and other areas deemed essential for an intelligent approach to a problem in the student's chosen field. Once the general field has been selected, the research and thesis may be completed in any one of the many divisions of that field. In horticulture, for example, the research and thesis may be in olericulture or pomology; in soils the problem may relate to fertility, soil physics, soil microbiology, or soil and water conservation; in field crops the problem may be directed toward crop production and management, weeds and pest control, and other supplementary areas. Often a problem can combine study in two of these more restricted divisions.

Important research facilities are available in the department through three co-operative experimental farms. The Illinois Horticulture Experiment Station and the Agronomy Research Center are operated co-operatively with the University of Illinois; the Small Fruits Research Station is operated co-operatively with the United States Department of Agriculture, Agriculture Research, Crops Research Division.

The purpose of the Horticulture Experiment Station is to provide facilities for research and demonstration with fruit, vegetable, and ornamental crops. The station's land area includes a twenty-eight-acre south unit, a fifty-five-acre west unit, and approximately twenty-five acres for vegetable research. The station headquarters, located on the west unit, includes a combination research-laboratory storage building, a machinery shed, a sash-type greenhouse, a plastic greenhouse, and a propagation cellar. A pond of one and one-half acres provides water for spraying and irrigating. Specific projects undertaken include the testing, breeding, and developing of fruit, vegetable, and ornamental varieties adapted to southern Illinois; studying fundamental problems related to cultural methods and to rootstock-variety combinations; and providing demonstrational areas for students and growers.

The purpose of the Agronomy Research Center is to provide facilities for soils and crops research and demonstrations. The station includes approximately one hundred acres of land at two locations. Projects are conducted on a co-operative basis by personnel of the University of Illinois and Southern Illinois University, or independently by personnel of either institution. Studies are conducted to develop acceptable varieties of field and forage crops, emphasizing their adaptability to southern Illinois; and to seek answers to fundamental problems in the management of soils and the culture of crops. Demonstrations are developed for observation by students and other interested persons.

The purpose of the Small Fruits Research Station is to provide facilities for research investigations on breeding, production, and disease control of strawberries, blueberries, brambles, and other small fruits. The station includes fifty acres of suitable land supplemented by an irrigation pond and a station service center with a shop, machine storage, and field laboratory located on immediately adjacent acreage. The pond has a capacity of approximately fifteen million gallons. The Federal Government is presently constructing several greenhouses with headhouses in connection with this station.

The purpose of the Southwestern Farms Experiment Station is similar to that of the Agronomy Research Center with respect to soils and demonstration but includes forestry, research and demonstration as well. There are approximately 183 acres in this farm, located south of Scott Air Base near Belleville, and the land is approximately evenly divided between soils and crops, research and demonstration in plant industries and similar use in forestry.

Because of the diversity of areas of interest in the Department of Plant Industries, no general curriculum is applicable for all graduate students. Each graduate student's background is studied carefully by a committee, chosen for his specific area of interest, and his approval for admission to study in the department is made upon the condition that weaknesses in his background be satisfied. When the student is on campus he is invited to attend the committee's discussion so that he understands fully why every requirement is made.

The Department of Plant Industries requires for approval to do graduate work that a student have not less than a 3.5 average in the last 50% of his work, which must include 20 hours in his major undergraduate field. The undergraduate major may be in any area, but the undergraduate area has much to do with the preparatory courses required by his advisory committee.

An oral examination over all graduate work and the submission of a thesis are required.

For additional information concerning programs and assistantships write to the Chairman, Department of Plant Industries, Carbondale.

PSYCHOLOGY

The Department of Psychology offers graduate work leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees. The primary emphasis is on doctoral training, for which the master's degree is a prerequisite.

Separate application forms for both the Department of Psychology and the Admission Office must be filled out. Both forms may be obtained from the department.

Doctoral programs are offered in general experimental psychology and in the professional areas of clinical, counseling, and industrial psychology. The general experimental program embraces the research areas of learning, motivation, sensation, perception, psychophysics, social, child, and personality.

In addition to approved programs of study, doctoral students in the clinical, counseling, and industrial areas must complete the equivalent of a full-time academic year of internship in an agency approved by the department. Doctoral students in general psychology have an equivalent period of experience in teaching or research.

Minor programs may be worked out in all areas in which specialization is offered, provided that the candidate presents suitable preparation for the level of work to be undertaken.

No student will be accepted for graduate work in the department without prior application to, and approval by, the departmental admissions committee as well as the University's Admissions Office. Departmental application forms and information concerning fellowships and assistantships may be obtained from the Chairman, Department of Psychology.

It is apparent that psychologists are faced with demands to deal with an ever-increasing range of problems, basic as well as applied. As a consequence, the goal of graduate study at Southern Illinois University is to develop psychologists who will have a broad perspective and scientific sophistication, as well as the requisite skills to advance the field of psychology and meet changing needs. To accomplish this aim, a program composed of four integral parts has been developed: the core curriculum, specialization, research and practicum opportunities, and training assignments.

CORE CURRICULUM

The core curriculum is designed to give systematic work in both the theoretical and substantive material of general psychology (501-12 Proseminar in General Psychology), in quantitative methods (Mathematics 410-8 Statistical Analysis), and in research design (522 Research Design and Inference, 523 Research Seminar). This curriculum is considered basic to all areas of specialization and is required of all students in their first year of graduate training.

AREAS OF SPECIALIZATION

1. General Experimental Psychology

The general experimental program is planned for the student who wishes to have a broad academic course of advanced study in psychology. It is primarily intended for students working towards careers in teaching and research. While considerable flexibility is permitted so that the student may select courses from several areas, he is expected to concentrate in at least one area, e.g., learning, sensory processes, social, child, etc. Required courses: 409 History and Systems, 509 Instrumentation, and 524 Advanced Research Methods. In addition, the student is required to take research credit (591) during all but the first quarter of residence.

2. Clinical Psychology

The clinical program, approved by the Education and Training Board of the American Psychological Association, provides training such that the student may prepare for a career not only in clinical services, but also in research or teaching. While the student is expected to become competent in clinical skills, he is also encouraged to be able to evaluate critically the techniques which are currently available. To aid in this process and to foster a research orientation generally, each clinical major is required to take 595-1 Research Seminar during all but the first quarter of residence. Additional requirements are as follows: 530 Personality Theory and Dynamics, 593 Practicum in Clinical Psychology, 538 Group Therapy or 556 Clinical Treatment of the Child, 541-6 Psychodiagnostics I, 543-6, Psychodiagnostics II, 537 Counseling and Psychotherapy, and 598 Ethical and Professional Problems. In order to complete his major, the student is to elect four additional clinical courses congruent with his interests.

3. Counseling Psychology

The counseling program, approved by the Education and Training Board of the American Psychological Association, is designed to prepare the student for a variety of careers in counseling. There is some overlap with the clinical program, the extent being dependent, in part, on the particular interests of the student. Required courses: 530 Personality Theory and Dynamics, 421 Psychological Tests and Measurements, 536 Fundamentals of Counseling, 547 Assessment Procedures in Counseling, 593 Counseling Practicum, and 598 Ethical and Professional Problems. In

addition, the following electives are strongly recommended: part or all of the diagnostic sequence (541-6, 543-6), 538 Group Therapy, 431 Psychopathology, additional measurement courses, and work from other disciplines.

4. Industrial Psychology

The industrial program is designed to prepare students for a wide range of research activities in the industrial area. It includes 593 Industrial Practicum and other courses selected in conference with the adviser.

RESEARCH AND PRACTICUM

Because of our commitment to the importance of broadening the scientific base of psychology and to the development of skills in the application or teaching of psychological principles, a variety of research and practicum experience is considered an integral part of the student's training. Therefore, with the exception of the first quarter, the student is expected to participate in research or practicum each quarter of residence.

Research may be of the student's own design or may be in conjunction with various studies being conducted by staff members. Research competence in original individual research is required of all students.

TRAINING ASSIGNMENTS

As a vital part of our graduate training program, each student must be engaged in a training assignment each term. These assignments vary according to the needs and professional aspirations of the student. They are designed to supplement the formal course work by a variety of pre-professional activities such as assisting in research, teaching, etc., under staff supervision. The training assignment increases in responsibility as the student progresses. The amount of time required of the student varies from ten to twenty hours a week, depending upon his level of progress, the type of assignment, etc. The purpose of these assignments is to expose the student to some of the types of activities that he will ultimately be engaged in after he receives his degree.

RECREATION AND OUTDOOR EDUCATION

The M.S. in Ed. degree program in recreation and outdoor education is designed to meet the needs of (1) administrators and supervisors who wish to extend their professional competencies, (2) leaders and group workers already employed, especially those who seek to qualify for advancement, and (3) graduate students with undergraduate preparation in recreation or closely related fields who wish to prepare themselves for higher roles in recreation.

The program consists of a core curriculum of 20 hours selected from 450, 480, 510, 520, 530, 540. Educational Administration and Supervision 500 or an equivalent research course in an area of specialization, such as Sociology 587, is required.

A thesis is optional but is encouraged.

The program is divided into four areas of specialization, and there are 32 hours of required courses.

1. School Recreation and Outdoor Education. Required courses: 450, 480, 510, 520, 530, 540, 550, 560, Educational Administration and Supervision 539. It is recommended that a minor be selected from one of the following fields: educational administration, guidance, health education, physical education, psychology, sociology, or a related field.

2. Community Recreation. Required courses: 450, 480, 520, 530, 540, 550, 560, Geography 470, and Sociology 486. It is recommended that a minor be selected from one of the following fields: sociology, government, conservation, forestry, education, or community development.

3. Agency, Church, and Youth Organization Work. Required courses: 450, 520, 530, 540, 550, 560, Sociology 481, 489, 511. It is recommended that a minor be selected from one of the following fields: sociology, guidance, physical education, educational administration, or a related field.

4. Recreation for the Ill and Handicapped (Hospital and Institution). Required courses: 450, 480, 520, 530, 540, 550, 560, Special Education 413, 417, 574. It is recommended that a minor be selected from one of the following fields: special education, rehabilitation, sociology, guidance, health education, psychology, or instructional materials.

Practicum and Fieldwork

A unique feature of this program is the fact that each student is engaged in some form of actual experience at all times while he is in training.

During the first year, students are assigned to a different agency each quarter for pre-counseling experience. The purpose of this practicum is to acquaint the student with the organization and population in various rehabilitation agencies. Among the agencies used for this experience are a state mental hospital, an office of the Illinois Division of Vocational Rehabilitation, and a community mental hygiene clinic.

In the second year, the student engages in counseling practicum. This experience permits him to utilize his academic training, experience, and personal characteristics in direct work with clients.

At some time during his training, the student is required to spend one quarter in a full-time fieldwork experience in a rehabilitation agency. Currently this requirement may be fulfilled by training in a variety of agencies, including mental hospitals, state rehabilitation agencies, private rehabilitation centers, and camps for handicapped children and adults.

To supplement the recreation leadership curriculum, selected courses from related fields are recommended: Educational Administration and Supervision 500, 539, Government 467, Guidance 420, Sociology 407, 481, 486, 511, 587, Special Education 413, 417, 574.

The graduate minor in recreation consists of a minimum of sixteen hours from the recreation curriculum including 450 and 520.

A special course of study is designed for teachers and school administrators and church leaders who are primarily interested in the outdoor education program.

REHABILITATION

REHABILITATION COUNSELING

Two years of graduate work lead to either the Master of Arts or the Master of Science degree in rehabilitation counseling. A minimum of 72 hours is required for either degree.

Emphasis is given to practicum and field work experiences, and trainees receive various concurrent assignments in rehabilitation settings throughout their two-year program. In addition, each trainee will receive at least a three-month training assignment in the field.

The curriculum may be modified to fit the previous training, experience, and future occupational interests of the trainee. Early in the training program, a student is expected to plan with his adviser a meaningful pattern of electives to broaden his total education.

The following plan of study will serve as a guide for trainees in rehabilitation counseling. It can be modified for those interested in working with mentally retarded or for those who choose to serve as counselors in employment services, youth centers, and other settings.

First Year

Fall Quarter: Guidance 422b, Psychology 420, 440, 593m or Guidance 575d, Sociology 480

Winter Quarter: Guidance 537a or Psychology 536, Psychology 421, 593m or Guidance 575d, Sociology 481

Spring Quarter: Psychology 431, 547, 593n or Guidance 575a, Physiology 455, Special Education 573

Second Year

Fall Quarter: Psychology 593n or Guidance 575a, Special Education 571

Winter Quarter: Psychology 593n or Guidance 575a, Special Education 572

Spring Quarter: Guidance 481, 573, Psychology 593n or Guidance 575a, (optional)

Each candidate for the master's degree must conduct research culminating in a thesis. A final oral examination concludes his program.

Recommended Electives: learning, criminology, group dynamics, group psychotherapy, educational psychology, semantics, sensory processes, advanced social work, problems of the mentally retarded, sociology of aging, adolescent development, selection and placement, occupational information, economics of welfare, personality dynamics, general anthropology, speech correction, audiology, logic of the social sciences, social psychology, industrial relations, proseminar in psychology, community development, advanced statistics, industrial psychology, industrial sociology, government and labor, occupational analysis.

REHABILITATION ADMINISTRATION

The graduate program in rehabilitation administration is a 48-hour pro-

gram leading to the Master of Science degree. In general, the curriculum is a modification of the rehabilitation counseling program with less emphasis on counseling and testing. Departments offering courses which are utilized include guidance, physiology, psychology, sociology, and special education. Since the program is directed toward persons who have had considerable experience in the field, those courses listed in the rehabilitation counseling program will serve as a guide in preparing a final selection of courses for each student. In addition to the suggested core courses, students may be encouraged to take work in journalism, secretarial and business education, or speech. In every case, the following requirements apply:

1. The completion of 48 graduate hours. Academic work shall lead toward a general knowledge of medical and paramedical terminology and practice, fundamentals in counseling, community resources and organization, allied professions, occupational information, methodology, administration and supervision, and current concepts relating to rehabilitation theory and practice.
2. A thesis based upon research conducted by the student.
3. Three to six months of satisfactory, supervised experience in an approved rehabilitation setting may be required after the major portion of the course work has been completed. Satisfactory, supervised experience is defined as employment in a rehabilitation setting under the direction of a person of competent and certified experience.

In every case, the student's program will be based on previous experience and occupational goals. Programs will be approved by a graduate supervisory committee, acting under policies established by the Rehabilitation Institute and the Graduate School.

SECONDARY EDUCATION

One may work in this department toward the Master of Science in Education degree and toward the Specialist's Certificate. In addition, the department offers courses that are applicable to most of the functional areas of the Ph.D. degree program in education.

A program consisting of 48 hours of work for the master's degree will be arranged jointly by the Department of Secondary Education and the subject matter area department in which the student plans to teach. A student's undergraduate record, experience, and future plans will be taken into account in determining the number of courses in secondary education and subject matter to be taken. The same procedure will be followed for those who plan to pursue administrative or supervisory duties in the secondary school. Appropriate elective courses will be found for those individuals who plan to work in junior colleges or other post-high-school situations.

The work leading to the Specialist's Certificate is arranged in terms of the needs and future plans of the student. Many of the same procedures used in selecting courses at the master's degree level are also applied in this program.

It is assumed that the future plans of candidates seeking the Doctor of Philosophy degree and taking courses in the Department of Secondary Education will involve one or more of the following areas: administration of a secondary school, supervision of selected area(s) in a secondary school, or the teaching of courses in education in a teacher-education institution, directing the student teaching program and/or student teachers in a secondary education laboratory school.

SECRETARIAL AND BUSINESS EDUCATION

Graduate courses in business teacher education may be taken as a major or minor in the Department of Secretarial and Business Education leading to the Master of Science in Education degree. The program in business teacher education consists of a minimum of 48 hours of course work distributed as follows:

1. 18–24 hours in business teacher education courses;
2. 12–18 hours in other School of Business courses;
3. 12–18 hours in College of Education courses; and
4. 0–12 hours of approved electives.

The graduate program is planned for those students who have an adequate subject-matter and professional-education background in at least one of the following business teaching areas: (1) secretarial, (2) general business, (3) bookkeeping and accounting, or (4) distributive education. Deficiencies in background, if any, must be eliminated by taking appropriate courses.

The graduate program is aimed at upgrading and making more proficient those individuals who have already met or surpassed the minimum requirements for teaching business subjects in the high schools of Illinois. The dual purpose of the program is to provide advanced professional education in business teaching fields and to develop competence in utilizing research findings in the field. In keeping with the general requirements of the Graduate School, each student is required to write a research paper. Those who have special interest and ability in research or who expect to go on to advanced graduate study are encouraged to write a thesis.

SOCIOLOGY

Graduate courses in business teacher education also may be taken as a part of a graduate program in the Department of Secondary Education leading to the Master of Science in Education degree.

The Department of Sociology offers major and minor programs for the Master of Arts, Master of Science, and Doctor of Philosophy degrees. Admission to a program of study in sociology is granted by the dean of the Graduate School upon recommendation by the chairman of the department. Applicants for the Ph.D. degree should apply in writing to the chairman of the department, outlining their interests, objectives, and previous preparation. The applicant should also arrange with at least three persons (preferably former teachers) who are familiar with his qualifications to submit confidential letters of recommendation.

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1. The completion of 48 graduate hours. Academic work shall lead toward a general knowledge of medical and paramedical terminology and practice, fundamentals in counseling, community resources and organization, allied professions, occupational information, methodology, administration and supervision, and current concepts relating to rehabilitation theory and practice.
2. A thesis based upon research conducted by the student.
3. Three to six months of satisfactory, supervised experience in an approved rehabilitation setting may be required after the major portion of the course work has been completed. Satisfactory, supervised experience is defined as employment in a rehabilitation setting under the direction of a person of competent and certified experience.

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4. 0–12 hours of approved electives.

The graduate program is planned for those students who have an adequate subject-matter and professional-education background in at least one of the following business teaching areas: (1) secretarial, (2) general business, (3) bookkeeping and accounting, or (4) distributive education. Deficiencies in background, if any, must be eliminated by taking appropriate courses.

The graduate program is aimed at upgrading and making more proficient those individuals who have already met or surpassed the minimum requirements for teaching business subjects in the high schools of Illinois. The dual purpose of the program is to provide advanced professional education in business teaching fields and to develop competence in utilizing research findings in the field. In keeping with the general requirements of the Graduate School, each student is required to write a research paper. Those who have special interest and ability in research or who expect to go on to advanced graduate study are encouraged to write a thesis.

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Graduate courses in business teacher education also may be taken as a part of a graduate program in the Department of Secondary Education leading to the Master of Science in Education degree.

The Department of Sociology offers major and minor programs for the Master of Arts, Master of Science, and Doctor of Philosophy degrees. Admission to a program of study in sociology is granted by the dean of the Graduate School upon recommendation by the chairman of the department. Applicants for the Ph.D. degree should apply in writing to the chairman of the department, outlining their interests, objectives, and previous preparation. The applicant should also arrange with at least three persons (preferably former teachers) who are familiar with his qualifications to submit confidential letters of recommendation.

The Doctor of Philosophy degree with concentrations in rhetoric and public address, general speech, and theater is offered by the department. Emphasis at the doctoral level is on competency in the area of specialization and in research. The research program is designed to provide the student with a knowledge of the processes and techniques involved in advancing basic understandings in the various areas of speech: experimental, descriptive, historical, and critical.

The concentration in rhetoric and public address is designed to acquaint the student with the materials and methods in areas of history and criticism of speech. Specialized courses involve studies in British and American public address; classical, medieval, renaissance, and modern rhetorical theory; seminars in discussion, persuasion, and rhetoric and public address. The program of each student is designed to meet particular needs in terms of the background of previous work.

The concentration in problems in oral communication (general speech) involves a more general program. The student takes a minimum of 15 hours including a seminar from each of three of four areas: general speech and speech education, oral interpretation, rhetoric and public address, and theater. This program is designed to meet the needs of students interested in the various areas of the field of speech.

The concentration in theater is based upon specialized work in theory of drama and the theater, theater history, and dramatic production in which a minimum of 24 hours must be taken, and in more general courses from rhetoric and public address, interpretation, general speech, and speech education from which a minimum of 24 hours must be included.

In all Ph.D. degree programs enrollment in a minimum of 36 hours of research for the dissertation is required. The dissertation is an important part of the program and the ability to do distinguished research is an essential characteristic sought in the candidate.

SPEECH CORRECTION

The Department of Speech Correction has as its objective the training of qualified personnel to work with people impaired in either speech or hearing. Course work leads to certification as a speech therapist in public schools and rehabilitation centers by meeting certification requirements of the American Speech and Hearing Association.

Professional experiences for graduate students are provided in the following settings: the University's Co-operative Clinical Services Center; a summer residential camping program for organic speech problems, in co-operation with the University of Illinois Division of Services for Crippled Children; the V.A. Hospital in Marion; and the Anna State Hospital. Co-operative programing is maintained with other public and private agencies such as the Division of Vocational Rehabilitation, the Easter Seal Society, and the American Hearing Society. Students participate in traveling speech and hearing clinics which serve schools and communities through the media of surveys, diagnostic examinations, and therapy.

Specialized experiences with orthodontists, prosthodontists, plastic surgeons, otologists, and others of the medical and dental professions are available in the St. Louis area. Emphasis is on the interdisciplinary relationships with other professions throughout the training process.

The department maintains active research facilities which provide laboratories and specialized equipment to study muscle action in speech functions by electromyography, experimental audiology, palmar sweating as a physiological index of anxiety, and pathoanatomy and pathophysiology of cleft lip and cleft palate through roentgenocephalometrics and cinefluoroscopy.

Graduate courses in the Department of Speech Correction may be taken as a major leading to the Master of Arts, Master of Science in Education, Master of Science, and Doctor of Philosophy degrees. Requirements for the various degrees are determined through advisement commensurate with professional growth of the student.

TECHNOLOGY

Graduate programs leading to either a Master of Science or a Master of Science in Education degree are available to graduate students majoring in one of the areas of technology. There are opportunities for advanced study in technology with areas of concentration in appropriate fields such as applied science, engineering, engineering technology, industrial education, and industrial technology.

For additional information, consult the School of Technology.

THEATER

The Department of Theater offers courses leading to the Master of Arts, Master of Science, and Master of Science in Education degrees and contributing to the Doctor of Philosophy degree in speech with a theater specialization. Each candidate for the master's degree will do a thesis or its equivalent (creative work in play direction, costume or scene design, playwriting, etc.). The chairman appoints a director for each candidate's program. The Ph.D. program in speech with a concentration in theater is open to students holding a master's degree. Ph.D. candidates are required (1) to complete a minimum of 48 hours in theater and speech and (2) to complete a theater dissertation (although properly qualified candidates may offer a creative equivalent) under the supervision of a theater-speech advisory committee. Graduate courses in theater may also be taken as a minor leading to the Ph.D. degree in speech.

Candidates for the Ph.D. degree who have a special interest in dramatic literature may earn the degree by working in English and theater rather than in speech and theater.

An undergraduate major in theater is not essential for admission to candidacy for a graduate degree. A student with an undergraduate major in speech or English, for instance, may audit undergraduate courses in theater to make up any deficiencies.

Graduate students are urged to supplement their class work with

practical experiences in acting and production: membership in the Southern Players is open to graduate students, and they may also earn graduate course credit as members of the Southern Touring Company and the Summer Stock Company.

ZOOLOGY

Graduate work in zoology may be taken as a major or a minor toward the Master of Arts, Master of Science, and Doctor of Philosophy degrees and as part of a program in biological sciences toward the Master of Science and Master of Science in Education degrees.

Candidates for the Master of Science and Master of Arts degrees must have the consent of the department and at least 35 hours of undergraduate credit in zoology equivalent to 102, 103, 202, 300, 310, and 401. Further required undergraduate work includes one year of chemistry, one year of botany, two quarters of physics, and one year of, or demonstrated proficiency in, a foreign language. Deficiencies in undergraduate preparation may be removed concurrently with graduate work.

Completion of work for the Master of Science or Master of Arts degree requires, in addition to the general requirements of the Graduate School, an approved thesis, Zoology 581, and continuous registration in 582. A minor outside the department is recommended.

In addition to the above requirements for the master's degree, the Doctor of Philosophy degree requires organic chemistry, animal physiology, experience in marine ecology, and demonstrated proficiency in statistics and two foreign languages.

Course Descriptions

3

Here are described all of the courses offered by the University for graduate credit. Courses are listed numerically within each subject-matter area. Areas are listed below in the order of their appearance on the following pages.

Accounting	German	Mathematics
Agricultural Industries	Russian	Microbiology
Animal Industries	Spanish	Music
Anthropology	Romance Philology	Philosophy
Applied Science	Forestry	Physical Education
Art	Geography	Physics
Botany	Geology	Physiology
Chemistry	Government	Plant Industries
Clothing and Textiles	Guidance	Psychology
Design	Health Education	Recreation and Outdoor
Economics	Higher Education	Education
Educational	History	Secondary Education
Administration	Home and Family	Secretarial and Business
Elementary Education	Home Economics	Education
Engineering	Education	Sociology
Engineering Technology	Industrial Education	Special Education
English	Industrial Technology	Speech
Food and Nutrition	Instructional Materials	Speech Correction
Foreign Languages	Journalism	Technology
French	Management	Theater
	Marketing	Zoology

The first entry for each course is a three-digit numeral which, together with the subject area, serves to identify the course. Courses numbered 400-499 are open to both seniors and graduate students. A senior who wishes to receive graduate credit for a 400-level course during his last quarter of undergraduate study must apply for admission to the Graduate School and must obtain, at the time of registration, the approval of the instructor and the dean of the Graduate School; and the instructor must indicate on the class card which is submitted to the Registrar at the end of the quarter that the student has earned graduate credit in the course. Courses numbered above 499 are for graduate students only. A senior within 16 hours of graduation may take 500-level courses for graduate credit during his final quarter of undergraduate study if he has applied to the Graduate School.

Following the identification number are a dash and another number, which indicates the maximum credit allowed for the course. The maximum may be variable, such as *Art 405-2 to 12*. Some courses do not terminate at the end of one quarter, as evidenced by two or more numerals in parentheses indicating the credit allowed for each quarter of participation in the course.

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites.

The final entry for each course is a letter or two letters. The letter *C* means that the course is available only on the Carbondale Campus. Similarly, the letter *E* means Edwardsville Campus only. Both letters together mean that the course is offered at both campuses. However, not all of the courses described here are offered every quarter or even every year. To find out when and where a course is to be offered, consult the Schedule of Classes, which may be obtained from Central Publications, Southern Illinois University, Carbondale, Illinois 62903. When requesting a schedule, please specify *campus* (Carbondale or Edwardsville) and *quarter* (fall, winter, spring, or summer).

For example, *Applied Science 415-9 (3,3,3)* is offered at Carbondale only, for a total of 9 hours of credit. The course runs for three quarters at 3 hours per quarter. First one takes *415a-3*, then he takes *415b-3*, and finally he completes the course by taking *415c-3*.

ACCOUNTING

410-4 Survey of Accounting. Purpose is to permit non-accounting majors and teachers to study advanced accounting from the standpoint of its usefulness in controlling and administering an enterprise. Critical analysis of reports, statements, and other accounting data but with little attention given to accounting techniques used in collecting and reporting such information. Prerequisite: 250 or 251-12 or equivalent. Not open to accounting majors. C

415-4 Electronic Data Processing in Business. A study of the uses of electronic computers in business data processing. Includes an introduction to linear programming as it assists management in decision making. The student will prepare some programs in compiler language. There will be a limited amount of instruction in the operation of computer equipment. Prerequisite: 251-12 and consent of instructor. C

432-4 Problems in Federal Taxation. Study of income tax problems which arise from partnership, corporation, estate, and trust types of organization. Brief study of social security, federal estate, and gift taxes. Student does research in source materials in arriving at solutions of complicated tax problems. Prerequisite: 331. CE

442-4 Advanced Cost Accounting. Cost accounting for complex process production flows, joint products and by-products, spoilage, defective units and scrap. Managerial control and profit planning through capital budgeting, inventory planning, subjective probabilities, statistical methods, and operations research. Non-manufacturing costs, differential and comparative cost analysis. CE

458-4 Accounting Systems. Problems in accounting systems design and installation. Examination of existing systems and practice in system design and reports. Prerequisites: 341, 351-8. CE

459-4 Internship in Accounting. Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the committee on internship. C

461-4 C.P.A. and Advanced Accounting Problems. A problems course, using problems from the examination sponsored by the American Institute of Certified Public Accountants and given in the last few years. Some problems also drawn from other sources. Prerequisites: 341, 351-8. CE

500-1 to 5 Readings in Accounting. Directed readings on selected topics. C

501-1 to 5 Individual Research in Accounting. Directed research in selected areas. C

550-4 Accounting Theory. Contemporary advanced accounting theory, including controversial issues with emphasis on net income determinations and asset valuation. Particular attention given to current publications of the profession and governmental agencies. Prerequisite: 351-8 or 410 or equivalent. C

557-4 Advanced Auditing. A study of the development of auditing theory and its implications for auditing practice. Specific discussions of auditing standards and concepts are emphasized, including pronouncements and bulletins of the American Institute of Certified Public Accountants and current literature. Prerequisite: 356 or consent of instructor. C

562-4 C.P.A. and Advanced Accounting Problems. A problems course including some highly technical C.P.A. examination problems not covered in undergraduate courses. Prerequisite: 461 or consent of instructor. C

565-4 Controllership. A study of the function of controllership in a business organization. Includes an analysis of the duties and responsibilities of a controller, in his capacity as the chief accounting executive of a firm. Attention is given to the contribution of a controller to effective planning, co-ordination, and control through accounting. Case studies. Prerequisites: 341 and 351-8 or consent of instructor. C

599-1 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

AGRICULTURAL INDUSTRIES

410-2 to 4 Problems in Agricultural Services. Discussion, assignments, and special workshops on problems related to in-service training programs in the agriculturally related fields. Development of more effective programs in working with farm people. Prerequisite: graduate student in agricultural services or consent of instructor. C

411-3 Agricultural Extension. A study of the history, organization, objectives, programs, and methods of agricultural extension work. Prerequisite: Journalism 393 and a course in psychology or sociology or consent of instructor. C

413-3 Agricultural Education Practices. C

417-4 Agricultural Development. Principles and practices in improving agriculture in areas with limited capital and low levels of technology. Special emphasis on developments in Asia, Africa, and South America. Prerequisite: GSB 211-9 and consent of chairman. C

450-4 Advanced Farm Management. Methods of analyzing farm enterprises, comparing farm enterprises, comparing farm businesses, allocating farm resources, combinations of enterprises, and production factors. Prerequisite: 350. Field trips cost about \$5. C

456-11 (3,2,2,2,2) Agricultural Marketing Problems and Practices. (a) Cooperatives. Development of the agricultural cooperative movement, agricultural cooperative organization, legal requirements, principles and practices of agricultural cooperative associations. (b) Livestock. Problems and their solutions in marketing livestock. (c) Field Crops. Problems and their solutions in marketing field crops. (d) Dairy and Poultry. Problems and their solutions in marketing dairy and poultry products. (e) Horticultural Crops. Problems and their solutions in marketing horticultural crops. Field trip cost \$5. Prerequisites: 354, GSB 211a, or consent of instructor. C

471-4 Land Resource Economics. (Same as Forestry 471 and Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; elementary land resources planning techniques. Field trips cost about \$5. Prerequisite: GSB 211, Econ. 215, or Forestry 215, or Forestry 470. C

478-4 Advanced Farm Machinery. Materials on construction; basic mechanics involved in tillage machinery; rotary powered transmission; product cleaning, drying, and sorting; costs of operation; materials handling. Prerequisites: 350, 373, 374, or consent of instructor. C

505-3 Agricultural Economics Research Methods. Agricultural economics research methods with particular reference to types of research problems encountered, sources of data, problems in developing new data and methods of analysis. Prerequisite: consent of chairman. C

- 520-1 to 6 Readings.** Contemporary books and periodicals on selected areas of the field. C
- 520b-1 to 6. Readings in Resource Economics.** (Same as Forestry 520b and Economics 502.) Directed reading in the field of natural resource economics. C
- 550-4 Production Management.** A study of the principles of production economics upon which problems in agricultural production and resource use can be analyzed. Emphasis on principles applicable to the farm business and to farm policy, including concepts relating to the decision-making process and farm planning under perfect and imperfect knowledge and with limited resources. Prerequisite: 12 hours equivalent in economics and agricultural economics and consent of instructor. C
- 552-2 Advanced Agricultural Prices.** Continuation of analysis of factors affecting agricultural prices; the application of these factors in price prediction. Prerequisite: 352. C
- 554-4 Advanced Agricultural Marketing.** Current complex problems in agricultural marketing and methods of developing solutions; co-operative activities. Prerequisite: 12 hours or equivalent in economics and agricultural economics. C
- 575-1 to 6 Research.** Directed research in selected areas of agricultural industries. C
- 581-1 to 6 Seminar.** Problems relating to various phases of the field of agricultural industries, such as farm management, marketing, prices, farm policy, land economics. C
- 582-1 to 3 Seminar on Foreign Agricultural Problems.** C
- 599-1 to 9 Thesis.** Minimum of 5 hours to be counted toward a master's degree. C

ANIMAL INDUSTRIES

- 415-8 (4,4) Animal Nutrition.** (a) Physical and chemical properties of nutrients and their uses and principles involved in determination of nutrient requirements. (b) An integration of the basic facts concerning the nature of nutrients and their metabolism. Must be taken in a,b sequence. Prerequisites: 315 and GSA 101 or equivalent. C
- 420-4 Commercial Poultry Production.** Broilers, layers, and turkeys as adapted to poultry specialty farms. Field trips. Prerequisite: 125. C
- 430-4 Dairy Production.** Milk production; feeding, breeding, calf raising; records, buildings, and equipment; sanitation; and disease. Field trip costs about \$5. Prerequisites: 231, 315. C
- 431-4 Reproduction and Artificial Insemination of Farm Animals.** The anatomy and physiology of reproduction and the principles of artificial insemination in farm animals. Prerequisites: 105 or 231, GSA 201c. C
- 432-3 Quantitative Inheritance of Farm Animals.** A review of the principles underlying the influence of mutation, selection, migration, and random drift in animal breeding population; estimation and interpretations of heritabilities and genetic correlations; effects of variances of quantitative traits of farm animals. Prerequisite: 332. C
- 433-3 Dairy Cattle Feeding.** Nutrient requirements of dairy cattle. Feeding calves and heifers for economical growth and cows for economical milk production. Pasture, hay, and silage utilization in milk production. Prerequisites: 231, 315. C
- 456b-2, 456d-2 Agricultural Marketing Problems and Practices.** (See Agricultural Industries 456.) C
- 465-4 to 5 Swine Production.** Breed selection, breeding, feeding, management, and marketing of swine. Field trip costs about \$3. Prerequisites: 105, 315. C
- 480-4 Sheep Production.** Breeding, feeding, and management of sheep. Field trip costs about \$3. Prerequisites: 105, 315. C
- 485-4 Beef Production.** Breeding, feeding, and management of beef and dual-purpose cattle. Field trip costs about \$3. Prerequisites: 105, 315. C
- 486-4 The Range Livestock Industry.** Designed to acquaint advanced animal industries students with range livestock operation; consists of full-time classroom review of beef cattle and sheep production followed by a two- to three-week field trip through the range area. Prerequisites: 480, 485. Summer only. C
- 487-3 Commercial Livestock Feeding.** Principles and problems in fattening beef

- cattle and sheep for market. Prerequisites: Animal Industries 105 and 315. C
- 505a-5 Research Methods in Agricultural Science.** Training and experience in designing experiments and use of various techniques in agricultural research. Prerequisite: consent of instructor. C
- 520-1 to 6 Readings in Animal Industries.** Readings in specialized fields under direction of approved graduate specialists. C
- 525-4 Advanced Poultry Production.** Study and interpretation of the objectives, design, and results of research in poultry feeding, breeding, and management. Prerequisite: consent of instructor. C
- 530-4 Advanced Dairy Production.** Study and interpretation of research in dairy farming, including buildings, herd management, quality milk production, and dairy marketing problems. Prerequisite: 430. C
- 565-4 Advanced Swine Production.** Study and interpretation of research in swine feeding, breeding, housing, management and marketing problems. Prerequisite: 465. C
- 575-1 to 6 Individual Research.** Investigation of a problem in animal science under the supervision of an approved graduate specialist in that field. C
- 581-1 to 6 Seminar.** Problems relating to various phases of animal industries. C
- 585-4 Advanced Beef Production.** Principles and practices in beef cattle production in the light of research findings. Prerequisite: 485. C
- 599-1 to 9 Thesis.** Minimum of 5 hours to be counted toward a master's degree. C

ANTHROPOLOGY

- 400-4 Man and Culture.** The nature of culture and cultural process. Relationships of culture and man as an individual and as a group. Emphasis on "the anthropological point of view." C
- 401-4 Language in Culture.** Language as a part of culture. Linguistics and the study of culture. C
- 404-4 Primitive Art and Technology.** The development of man as a tool-using and art-loving being. Artistic and technological traditions of non-Western peoples, past and present. C
- 405-4 Social Anthropology.** A comparative approach to the organizational features of human groups. Functional aspects and distributions of kinship, political, religious, and economic systems. C
- 408-4 History of Anthropological Thought.** The growth of anthropology to about 1860, followed by a more intensive survey of the concepts and ideas of anthropology during the past hundred years. C
- 409-4 Anthropology and Modern Life.** The applications of anthropological principles to the solution of problems of the modern world. Contributions of anthropology to the work of the educator, social worker, administrator, business man, government official, and other specialists dealing with man in Western and non-Western cultures. CE
- 430-4 Archaeology of North America.** An introduction to the methods of archaeology and a survey of prehistoric Indian cultures north of Mexico, with particular emphasis upon the cultures of the Mississippi Valley. E
- 470-4 Social Anthropology.** Theory and method in community study; functional analysis, cultural themes and values in both primitive and modern cultures. E
- 483-3 to 18 Individual Study in Anthropology.** Guided research upon anthropological problems. Students should consult the chairman before enrolling. C
- 501-9 (3,3,3) Pro-seminar in Physical Anthropology.** C
- 503-9 (3,3,3) Pro-seminar in Archaeology.** C
- 505-9 (3,3,3) Pro-seminar in Linguistics.** C
- 507-9 (3,3,3) Pro-seminar in Social Anthropology.** C
- 509-9 (3,3,3) Pro-seminar in Ethnology.** C

The 500-level courses listed above start in the fall and continue through the spring quarter. At the end of each course, a six-hour writ-

ten examination is given. The five six-hour written examinations of these courses constitute, together, Part I of the General Examination. Usually, though not necessarily, a student takes three of the pro-seminars his first year on campus, and the remaining two during his second.

A candidate for the General Examination must pass all five of the aforementioned examinations, whether he attends the courses or not, before he can proceed to Part II of the General Examination, which is a three-hour oral examination.

The following seminars are offered irregularly at the Carbondale campus and deal with areal and topical problems relevant to the title listed; they will vary in subject matter from year to year.

- 510-3 to 27 Seminar in New World Archaeology.
- 511-3 to 27 Seminar in Mesoamerican Archaeology.
- 512-3 to 27 Seminar in Old World Archaeology.
- 520-3 to 27 Seminar in the Ethnology of the New World.
- 521-3 to 27 Seminar in the Ethnology of Mesoamerica.
- 522-3 to 27 Seminar in the Anthropology of Oceania.
- 523-3 to 27 Seminar in the Anthropology of Africa.
- 524-3 to 27 Seminar in the Anthropology of Europe.
- 535-3 to 27 Seminar in Physical Anthropology.
- 545-3 to 27 Seminar in Linguistics.
- 550-3 to 27 Seminar in the Cultures of Latin America. Topics such as the impact of European conquest and dominance upon the native peoples and cultures in Latin America, pre- and post-conquest manuscripts, assimilation of non-indigenous peoples with the native cultures.
- 560-3 to 27 Seminar in Comparative Social Organization. Topics such as religion, political organization, social structure, economics, kinship.
- 562-3 to 27 Seminar in the Anthropology of Contemporary Peoples. Topics such as applied anthropology, peasant cultures, American culture and values.
- 565-3 to 27 Seminar in Cultural Change and Development. Topics such as the building of cultures, acculturation, the rise of civilization.
- 567-3 to 27 Seminar in Anthropological Theory and Method. The theory and method of archaeology, or ethnology or physical anthropology.
- 570-3 to 27 Seminar in Art and Technology. Topics such as the art of the early civilizations, the cultural background of art and technology, experimental problems of art and technology.
- 575-3 to 27 Seminar in the Individual and Culture. Topics such as themes and values, culture personality, enculturation, education.
- 581-3 to 27 Seminar in Anthropology.
- 582-3 to 27 Problems in Archaeology. Guided research upon archaeological problems.
- 584-3 to 27 Problems in Cultural Anthropology. Guided research upon problems of ethnology, social anthropology, and linguistics.
- 585-3 to 27 Readings in Anthropology. Guided readings designed to cover special topics and to fill gaps in the student's specialized anthropological background.
- 597-3 to 27 Fieldwork in Anthropology.
- 599-1 to 9 Thesis.
- 600-1 to 48 Dissertation.

APPLIED SCIENCE

415-9 (3,3,3) **Water Supply and Waste Water Disposal.** (a) A study of the principles involved in the collection, storage, treatment, and distribution of water for municipal, industrial, and irrigation use. (b) The removal of storm waters, municipal sewage, and excess irrigation waters; water rights and stream administration; water

quality criteria; the economic aspects of projects. (c) Theory of unit operations as applied to the treatment of water and waste water; and the design of works for the collection, treatment, and disposal of water and liquid wastes. Laboratory. Must be taken in a,b,c sequence. Prerequisite: consent of instructor. C

420-3 Digital Computers in Research. Basic foundations used in operations research. An intensive study in the use of digital computers as related to topics such as probability and statistics, matrices, game theory, Monte Carlo techniques, distribution and scheduling problems, and simulation. Prerequisite: 222. C

421-3 Programming Languages. A study of development and the use of automatic programming languages for stored program electronic computers. Included are symbolic languages, interpretive systems, algebraic-oriented and business-oriented data processing languages, macro assemblers, and list processors. (ALGOL, FORTRAN, COBOL, COMIT, IPL, etc.) A comparison of the languages will be made, and each student will prepare programs using the languages studied. Prerequisite: 222. C

422-3 Programming Systems. The use and methods of electronic data processing systems. Topics are searching, ordering, codifying, information retrieval, process control, executive routines, and heuristic programming. The student will apply system techniques for solution of problems using the computer equipment of Data Processing and Computing Center. Prerequisite: 222. C

431-9 (3,3,3) Nuclear Science. An introductory course to provide a background for further work in Nuclear Science. Lectures and problems in materials, heat transfer, and fluid flow. Emphasis is given to basic ideas and the mathematical similarity of the problems in heat transfer, fluid flow, and neutron diffusion. An introduction to reactor analysis. Use of an analog computer in solving problems of neutron transport and reactor kinetics. Prerequisite: differential equations (Mathematics 305a) and Physics 211c. C

450-4 Elementary Statistical Mechanics. Elementary statistical mechanics, with applications to simple physical and chemical systems. C

470-5 Introduction to Quantum Theory. Study of the experimental foundations of quantum mechanics and the quantum theoretical interpretation of atomic phenomena. C

501-9 (3,3,3) Materials Science. (a) The crystal structure of materials. (b) Crystalline materials preparation. (c) Perfection of crystalline materials. C

502-6 (3,3) Materials Structure Analysis. (a) X-ray diffraction techniques. (b) Crystal structure analysis. C

503-6 (3,3) Physical Properties of Crystalline Materials. (a) Equilibrium properties. Paramagnetic and diamagnetic susceptibilities. Electric polarization. Ferroelectricity, Ferro and Ferrimagnetism. Thermal expansion, Piezoelectricity. (b) Elasticity. Thermodynamics of equilibrium properties. Transport properties: thermal and electrical conductivity. Thermoelectricity. Crystal optics: optical activity. Non-continuous properties: cleavage. Plasticity. C

516-4 Water Resources Development. Seminar on engineering problems and economic factors relating to multiple-purpose water resources development. Planning of design features of components for system performance. The integrated use of water from all sources: ground and surface water, waste water, and saline water. Modern trends of large-scale land reclamation, hydropower, tidal power, and pump-storage schemes. Prerequisite: 415 C

521-6 (3,3) Design of Automatic Programming Language Processors. Analysis of design and construction of automatic programming language processors. An investigation of the structure of scientific and business oriented compilers, list processors, and information processing languages. The student will be expected to review recent papers on these topics, to prepare an aspect on theory, prepare flow charts and program segments of the processors for the language studied. Prerequisite: 421. C

522-6 (3,3) Programming Systems Design. Design of monitor systems, executive routines, simulators and other systems. An analysis of problems encountered in designing a programming system. The student will be expected to review recent papers on these topics, prepare flow charts, to complete an aspect of the theory, and to write programs for segments of the systems studied. Prerequisite: 422. C

ART

- Art Education: 408, 460, 466, 560, 566, 599.
- Art History: 445, 449, 471, 473, 475, 482, 483, 571, 573, 599.
- Studio Courses: 400, 401, 404, 405, 406, 410, 416, 420, 426, 430, 436, 440, 441, 446, 493, 501, 502, 504, 506, 511, 516, 520, 526, 530, 536, 540, 546, 599.
- 400-8 (4,4) Research in Art. Projects undertaken combine academic research of a historical nature with technical experimentation on the part of the artist. The project, which may be in painting, prints, pottery, weaving, metalsmithing, or sculpture, is stated in writing and submitted for approval and evaluation to a committee constituted of two art instructors and a third faculty member. May be taken in a,b or b,a sequence. Prerequisites: consent of art faculty. E
- 401-2 to 12 Research in Painting. C
- 404-8 (4,4) Studio in Art. Advanced independent study to be carried out under the committee established for 400. May be taken in a,b or b,a sequence: Prerequisite: 400-8. E
- 405-2 to 12 Studio in Sculpture. C
- 406-2 to 12 Studio in Painting. C
- 408-4 Art Education for Elementary Teachers II. C
- 410-2 to 12 Research in Prints. C
- 416-2 to 12 Studio in Prints. C
- 420-2 to 12 Research in Pottery. C
- 426-2 to 12 Studio in Pottery. C
- 430-2 to 12 Research in Metal Construction. C
- 436-2 to 12 Studio in Metal Construction. C
- 440-2 to 12 Research in Weaving. C
- 441-2 to 6 Studio in Drawing. C
- 445-9 (3,3,3) Modern Art. (a) 19th Century, (b) Early 20th Century, (c) Mid 20th Century. C
- 446-2 to 12 Studio in Weaving. C
- 449-3 Renaissance Art. 15th and 16th century European art with consideration of the significance of Renaissance art to the growth of Humanism. C
- 450-1 The Visual Arts in Higher Education. C
- 460-2 to 12 Research in Art Education. CE
- 466-2 to 12 Studio in Art Education. C
- 471-3 Baroque Painting in Italy. Major developments in style and expression in Italian painting from the late Mannerist period until the early 18th century. C
- 473-3 Romantic Art of the 19th Century. A study of the sources and characteristics of Romantic art, approached through the works of such masters as Gros, Delacroix, Blake, Friedrich, Goya, and certain Americans. C
- 475-3 Impressionist and Post-Impressionist Painting. The late 19th century in France: Impressionism, Neo-Impressionism, Pointillism, and early Expressionism. The styles of Manet, Monet, Degas, Renior, Seurat, Van Gogh, and Cezanne receive emphasis. C
- 482-3 Art History Seminar. Lectures, readings, and reports on artists, styles, subjects of special interest which will be announced periodically. C
- 483-3 to 12 Research in Art History. Individual research in the painting, sculpture, architecture, and related arts of the various periods. C
- 493-2 to 12 Advanced Sculpture. C
- 501-2 to 12 Seminar in Painting. C
- 502-2 to 12 Seminar in Sculpture. C
- 504-2 to 12 Research in Sculpture. C
- 506-2 to 12 Research in Painting. C
- 511-2 to 12 Seminar in Prints. C
- 516-2 to 12 Research in Prints. C
- 520-2 to 12 Seminar in Pottery. C
- 526-2 to 12 Research in Pottery. C

530-2 to 12 Seminar in Metal Construction.	C
536-2 to 12 Research in Metal Construction.	C
540-2 to 12 Seminar in Weaving.	C
546-2 to 12 Research in Weaving.	C
560-2 to 12 Seminar in Art Education.	C
566-2 to 12 Research in Art Education.	C
571-2 to 5 Readings in Art History.	C
573-3 to 12 Problems of Art History. A detailed study of single works of stylistic problems in selected areas of world art.	C
599-5 to 9 Thesis.	C

BOTANY

400-5 Plant Anatomy. An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisites: 300, 301.	C
403-3 History and Principles of Plant Taxonomy. Important concepts in plant classification through the ages, and study of the International Code of Botanical Nomenclature. Consideration of the functions of genetics, evolution, morphogenesis, and ecology in taxonomy. Prerequisite: 203 or consent of instructor. May be repeated.	E
404-4 The Algae (C); 404-5 The Algae (E). Structure, development, and relationships of the algae. Laboratory and some field work. Prerequisite: 300.	CE
405-5 Mycology (C); 405-5 The Fungi (E). Structure, development, and relationships of the fungi. Problems of economic and scientific interest stressed. Laboratory. Prerequisite: 300.	CE
411-4 The Bryophytes and Pteridophytes. Structure, development, and relationships of the liverworts and mosses, and the ferns and fern allies. Laboratory. Prerequisite: 301.	C
412-4 The Spermatophytes. Structure, development, and relationships of the gymnosperms and angiosperms. Laboratory. Prerequisites: 301, 313.	C
413-5 Comparative Morphology of Vascular Plants. Comparative studies of representative groups of vascular plants, including origin, structure, developmental tendencies, embryology, and fossil evidence. Three lecture and four laboratory hours per week. Prerequisites: 101, 202.	E
414-5 Paleobotany. (Same as Geology 414). An introduction to the study of fossil plants emphasizing the major features of plant evolution and the applications of paleobotany to problems in the botanical and geological sciences. Lecture, laboratory, and field trips. Student cost about \$5. Prerequisite: 310 or 400 or consent of instructor.	C
420-4 Physiology of Fungi.	C
425-15 (5,5,5) Advanced Plant Physiology. (a) Physics of the plant, water relations, membrane phenomena, photobiology. (b) Covers the absorption, translocation, function and interaction of inorganic nutrient elements in green plants with application to forest, agronomic, and horticultural species. (c) Chemistry of the plant; anabolic and catabolic processes, photosynthesis, respiration, chemosynthesis. Prerequisites: 320, Chemistry 350, or a chemistry minor.	C
428-3 Plant Nutrition. The physiological importance of carbon-, nitrogen-, and phosphorus-containing compounds is stressed. Prerequisites: organic chemistry, minor in botany or agriculture.	C
440-4 Ecology of Grasses and Grasslands. Structure, analysis, and dynamics of grassland communities; structure and growth of individual species. Field and laboratory work costs about \$5. Prerequisite: GSA 340 or consent of instructor.	C
445-5 Ecology of Forests and Arable Lands. Forest areas in North America. Developmental and structural analysis of forest types. Autecology of important species. Field trips, approximate cost \$10. Prerequisite: GSA 340.	C
449-3 Elements of Taxonomy. Principles of taxonomy including historical sketch, phyletic concepts, biosystematics, classical and experimental methods. Lecture. Laboratory. Prerequisite: GSA 203.	C

450-3 Plant Geography. World distribution of plants related to environmental, floristic, and historical factors. Prerequisites: 3 courses in botany or geography or consent of instructor. C

451-4 Introduction to Floristics. Principles involved and methods used in the analysis of the flora of an area. Laboratory and field work. Student cost about \$5. Prerequisite: Botany 313; GSA 340. C

455-4 Medical Mycology. Fungi which are responsible for infection of man and animals. Problems of classification, identification, isolation, and activity of these fungi. Prerequisites: 405, Microbiology 100 or consent of instructor. C

456-5 Plant Pathology. (Same as Plant Industries 355.) A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of southern Illinois plants. Laboratory and field trips. Prerequisite: consent of instructor. C

457-4 Forest Pathology. Nature and control of forest and shade tree diseases. A study of tree diseases in forests, parks, streets, and nurseries. Fungi important in decay and stain of timber and its products are included. Prerequisite: consent of instructor or 456. C

470-4 Methods of Teaching High School Biology. Methods, objectives, types of courses taught in secondary school biology. Laboratory and field trips. Prerequisite: major in botany or zoology. C

480-4 Classic Principles of Botany. Theories, principles, and developments in the various divisions of the plant sciences. Prerequisites: GSA 203, or consent of instructor. C

501-4 Plant Biology for High School Teachers. The principles of plant biology are illustrated. Emphasis is placed on the relation of the plant to the environment. Two lectures and two laboratories per week. Open only to graduate students in the National Science Foundation Program. Prerequisite: one year of biological science. C

502-2 Recent Developments in Biological Sciences. (Same as Zoology 502.) A series of lectures based upon recent research, designed to acquaint the teacher with advances and changes in concepts. Prerequisite: one year of biological science. C

503-15 (5,5,5) Angiosperm Taxonomy. (a) Systematic treatment of all families of the monocotyledoneae. (b, c) Systematic treatment of all families of dicotyledoneae. C

507-8 BSCS—High School Biology. C

522-5 Advanced Microtechnique. Preparation and presentation of research materials. Laboratory work only. Prerequisite: consent of department. Credit on work completed. C

525-5 Cytology. (Same as Zoology 525). Physiochemical, chemical, and morphological organization of the cell. Ultrastructure of the cellular organelles. Cytochemical and submicroscopical organization of the hereditary material. Morphology and function of the spindle of the nucleus and chromosomes during the mitotic cycle. Synthesis and replication of nucleic acids. RNA and protein synthesis. The genetic code. Enzymes and cell metabolism. Prerequisite: Botany 315 or Zoology 401. C

526-5 Cytogenetics. Correlation of cytology with genetics. Cell mechanics and nuclear division. Mitosis, meiosis, crossing over and mapping of chromosomes. Mutation, mitotic agents, effect of irradiation, polyploidy, structural aberrations, polytene chromosomes. Synthesis of new species, comparative karyomorphology. Evolution and cytogenetics. Prerequisite: 525 or consent of instructor (Carbondale); Botany 315 or Zoology 401 (Edwardsville). CE

533-3 to 4 Growth and Development in Plants. External and internal factors as they affect development and growth of plants, photoperiodism, and the role of growth-promoting substances. 1 hour to be arranged. Prerequisite: 320. C

542-3 Genecology and Community Concepts. Implications of findings on the nature of plant adaptation to environment. Genecology and physiological ecology viewpoints, considered at the species and community levels. Prerequisites: 340, or consent of instructor. C

543-5 Experimental Ecology. Experiments on plant response to environmental factors. Design of experiments, statistical methods, presentation of individual research findings. Laboratory. Prerequisites: 320, GSA 340, or consent of instructor. C

- 551-4 The Natural Vegetation of the Mississippi Basin, Upland.** Floristic studies of the upland vegetation which occurs in the central basin of the Mississippi River. Prerequisite: 313 or consent of instructor. C
- 552-4 Mississippi Flora, Aquatic.** An analysis of the aquatic vegetation of the Central Mississippi basin, discussing importance to wildlife. Prerequisite: 313 or consent of instructor. C
- 555-4 Advanced Plant Pathology I.** Diseases of field crops, horticultural crops, and trees incited by Phycomycetes and Fungi Imperfecti. Individual problems assigned. Prerequisite: 456 or consent of instructor. C
- 556-4 Advanced Plant Pathology II.** Diseases of field crops, horticultural crops, and trees incited by bacteria and viruses. Individual problems assigned. Prerequisite: 456 or consent of instructor. C
- 557-4 Advanced Plant Pathology III.** C
- 570-2 to 5 Readings.** C
- 580-1 to 4 Seminar.** To be taken by all graduate students majoring in botany. C
- 590-2 to 4 Introduction to Research.** Methods of presentation of research materials, including written reports, graphs, photographs, bibliographies. Taxonomy students learn to write keys and descriptions; Botanical Latin; nomenclature. C
- 591-3 to 9 Research.** Assignments involving research and individual problems. Prerequisite: consent of department. C
- 599-3 to 9 Thesis.** Work in the research for and presentation of a thesis. Not more than 9 hours nor fewer than 5 hours will be allowed on thesis work. Total hours in 591 and 599 cannot exceed 15 hours to be applied to the master's degree. C
- 600-1 to 48 Dissertation.** Minimum of 36 hours to be earned for the Ph.D. degree. C

CHEMISTRY

- 411-4 Intermediate Inorganic Chemistry.** Modern inorganic chemistry involving atomic structure, chemical bonds, complexes, and chelate structures; chemistry of familiar and less familiar elements. 3 lecture hours per week. Prerequisites: 460 or 461b. CE
- 412-3 Inorganic Preparations.** A study of several important inorganic syntheses. 1 lecture and 6 laboratory hours per week. Prerequisites: 235, 305b or 341c. CE
- 432-8 (4,4) Instrumental Analytical Measurements.** Theory and practice of instrumental analytical measurements, including spectrophotometric, electro-analytical, and chromatographic methods. 2 lecture and 6 laboratory hours per week. Prerequisite: 461b (May be taken concurrently). May be taken in either sequence. CE
- 433-3 Intermediate Quantitative Analysis.** A study of the analysis of complex materials, with emphasis on separations, functional group analysis, and instrumental applications. 2 lecture and 3 laboratory hours per week. Prerequisites: 432a and 461c. CE
- 444-3 Organic Reactions.** An intermediate course with emphasis on monofunctional compounds. Additional topics, not included in elementary courses, will be considered. 3 lecture hours per week. Prerequisite: 341c. C
- 446-4 Qualitative Organic Analysis.** A systematic study of the separation and identification of organic compounds by a procedure based on solubility and classification reagents. 2 lecture and 6 laboratory hours per week. Prerequisite: 305b or 341c. CE
- 447-3 Quantitative Organic Chemistry.** The determination of functional groups and elements commonly found in organic compounds by selected methods of analysis; illustration of general method of procedure in the field of quantitative organic chemistry. 1 lecture and 6 laboratory hours per week. Prerequisite: 305b or 341c. C
- 451-11 (3,3 or 4,3 or 4) Biochemistry (C); 451-8 (4,4) Biochemistry (E).** (a) Chemistry, function, and metabolism of carbohydrates; energy metabolism, vitamins. (b) Enzymes, lipids, amino acids, proteins. Modern laboratory methods. (c) Enzyme kinetics, nucleic acids, comparative biochemistry. Prerequisite: 235, 305b or 341c. Must be taken in a,b,c sequence. CE
- 460-5 Theoretical Chemistry.** Traditional aspects of physical chemistry without the

requirement of calculus. Lecture and laboratory. Prerequisites: 235, 305b or 341c, and one year of physics or consent of instructor. CE

461-12 (4,4,4) Physical Chemistry. (a) Gases, liquids, solids, solutions, and homogeneous and heterogeneous equilibria. 3 lecture and 3 laboratory hours per week. (b) Chemical kinetics, electrical conductance, electromotive force, and electrolytic equilibrium. 3 lecture and 3 laboratory hours per week. (c) Chemical thermodynamics, the quantum theory, nuclear structure, photochemistry, atomic and molecular structure. 3 lecture and 3 laboratory hours per week. Prerequisites: 235 (concurrent), 341c, 12 hours of physics, and one year of calculus. Must be taken in a,b,c sequence. CE

464-3 Intermediate Physical Chemistry. Intermediate between the first year of undergraduate physical chemistry and advanced physical chemistry. Gives a broad foundation in physical chemistry. 3 lecture hours per week. Prerequisite: 461c. CE

471-3 Industrial Chemistry. A survey course on modern industrial chemistry and an introduction to chemical research processes. 3 lecture hours per week. Prerequisite: 305b or 341c. C

490-2 Chemical Literature. A description of the various sources of chemical information and the techniques for carrying out literature searches. 2 lecture hours per week. Prerequisites: 235, 305b or 341c, reading knowledge of German or consent of instructor. CE

496-2 to 6 Chemical Problems. Investigation of relatively simple problems under the direction of a staff member. Prerequisites: senior standing, major in chemistry with 4.0 average, and consent of chairman. CE

511-9 (3,3,3) Advanced Inorganic Chemistry. Lecture. (a) A theoretical and empirical treatment of chemical bonding and molecular structure. (b,c) A systematic consideration of the chemistry of the elements, including special topics such as non-aqueous solvent systems, and inorganic stereochemistry. Must be taken in a,b,c sequence. Prerequisite: 461c. C

517-3 Laboratory Techniques in Inorganic Chemistry. Techniques for the inorganic research chemist. Includes advanced synthetic problems using glove box for dry and inert atmosphere and high vacuum apparatus. Prerequisites: 412, 511c. C

519-2 to 30 (2 to 6 per quarter) Advanced Topics in Inorganic Chemistry. Selected topics such as coordination compounds, less familiar elements, nonaqueous solvent systems, and others. Prerequisites: 511c and consent of instructor. C

531-3 Theory of Quantitative Analysis. The phenomena utilized in analytical chemistry, with emphasis on separation, organic reagents, and complex methods. Lecture. Prerequisite: 433 or equivalent. C

532-3 Instrumental Methods of Analysis. Theory and practice of instrumental measurements in analysis with emphasis on commercial samples and applications to research. Lecture and laboratory. Prerequisites: 432, 460 or 461b (concurrent). C

533-3 Industrial Analytical Methods. Theory of analytical procedures and techniques, current industrial applications. Lecture. Prerequisite: 532. C

539-2 to 30 (2 to 6 per quarter) Advanced Topics in Analytical Chemistry. Selected topics such as microanalytical chemistry, absorption spectroscopy, and electroanalytical chemistry; not more than 6 hours per quarter. Prerequisites: 432, 531. C

541-3 Advanced Organic Chemistry. Theoretical organic chemistry with emphasis on electronic theory and reaction mechanisms. Lecture. Prerequisite: 444 or satisfactory diagnostic test. C

542-3 Advanced Organic Chemistry. Application of modern theory to synthesis and reactions of organic compounds, with emphasis on polyfunctional compounds. Lecture. Prerequisite: 541. C

543-3 Advanced Organic Chemistry. The application of physical methods to organic chemistry; stereochemistry. Prerequisite: 542. C

547-3 to 6 Advanced Laboratory Preparations in Organic Chemistry. Prerequisite: 446 and consent of instructor. C

549-2 to 30 (2 to 6 per quarter) Advanced Topics in Organic Chemistry. Such topics

- as heterocycles, natural products, and quantitative organic theory. Prerequisite: 543. C
- 551-3 Advanced Biochemistry.** Proteins and nucleic acids. Three lecture hours per week. Prerequisite: 451c. C
- 552-3 Advanced Biochemistry.** Chemistry of simple sugars, oligosaccharides, and polysaccharides. Three lecture hours per week. Prerequisite: 451c. C
- 553-3 Advanced Biochemistry.** Plant biochemistry. Three lecture hours per week. Prerequisite: 451c. C
- 554-3 Biochemical Mechanisms.** Molecular transformations in biochemistry in terms of general mechanistic principles in chemistry. 3 lecture hours per week. Prerequisite: 451c. C
- 555-3 Enzymes.** Advanced enzyme chemistry. 3 lecture hours per week. Prerequisite: 451c. C
- 559-2 to 30 (2 to 6 per quarter) Advanced Topics in Biochemistry.** Selected topics such as enzymology and physical biochemistry. Prerequisite: 451c. C
- 561-3 Chemical Thermodynamics.** Basic methods and theories as applied to chemical problems. Lecture. Prerequisites: 461c and satisfactory diagnostic test. C
- 562-3 Atomic and Molecular Structure.** A survey of basic principles in atomic spectroscopy, quantum chemistry, and statistical thermodynamics. Lecture. Prerequisite: 561. C
- 563-3 Chemical Kinetics.** Factors determining the rates of chemical reactions. Lecture. Prerequisite: 562. C
- 569-2 to 30 (2 to 6 per quarter) Advanced Topics in Physical Chemistry.** Colloids and macromolecules, quantum chemistry of atoms, diatomic molecules or polyatomic molecules, statistical mechanics and others. Prerequisite: 561. C
- 575-1 to 3 Graduate Seminar.** Advanced level talks presented and discussed by graduate students. Required for all graduate students. C
- 594-2 to 15 (2 to 6 per quarter) Special Readings in Chemistry.** Assigned library work in any of the five fields of chemistry with individual instruction by a staff member. (a) analytical, (b) biochemistry, (c) inorganic, (c) organic, (e) physical. Prerequisite: 24 hours of 500-level chemistry and consent of chairman. C
- 595-0 to 9 Advanced Seminar in Chemistry.** A seminar for each field of chemistry. Prerequisite: consent of chairman. C
- 596-3 to 9 Advanced Chemical Problems.** Individual study and investigation in preparation for research. Prerequisite: 12 hours of graduate credit. C
- 597-3 to 15 Research and Thesis.** Prerequisite: consent of chairman. C
- 598-3 to 48 Research—Doctoral.** Prerequisite: consent of chairman. C
- 600-3 to 48 Dissertation—Doctoral.** Prerequisite: 598. C

CLOTHING AND TEXTILES

- 423-4 Advanced Family Housing.** (See Home and Family 423.) C
- 431-4 Advanced Applied Design.** Research problems in experimentation with materials in textile design, linoleum block printing, stencilling, contemporary embroidery, silk-screen printing, etc. Prerequisite: 131 or consent of instructor. C
- 432-2 to 8 Workshop.** Designed to aid leaders in the field with current problems. Discussion, reports, lectures, and other methods of analyzing and working on solutions to problems. Prerequisite: consent of chairman. C
- 433-4 Advanced Pattern Designing.** Experimentation in the application of flat pattern design principles to the making of patterns for garments of various designs. Emphasis upon suitability of patterns for specific fabrics. Construction of garment as final step in experimentation. Prerequisite: 233 or consent of instructor. C
- 434-4 History of Costume.** The history of costume from prehistoric times to the present. Social, economic, and aesthetic developments that influenced its design. C
- 461-4 Problems in Fitting and Pattern Alterations.** Principles of fitting and pattern alterations as related to various figure types and special figure problems. Application made by fitting and constructing a garment. Prerequisites: 127, 233, or equivalent. C
- 473-4 Advanced Tailoring.** The student will tailor one garment for herself. Time-

saving methods, high-quality construction details, and professional finishes stressed. Prerequisite: 360 or equivalent. Offered on demand. C

474-4 Advanced Textiles. The physical and chemical analysis of textiles. Problems dealing with standards, labeling, and legislation. Current literature of developments with the field. Prerequisites: 322, GSA 101c or consent of instructor. C

481-2 to 6 Readings. Supervised readings for qualified students. Prerequisite: consent of instructor and chairman. C

528-4 Recent Developments in Clothing and Textiles. Emphasis on the physical properties of the currently marketed fibers and fabrications. Interpretation of these to design and clothing construction. Prerequisites: 127, 135, or consent of instructor. C

570-4 Clothing and Textiles Seminar. Selected problems within the field of clothing and textiles. Offered on demand. C

571-4 Recent Research. Review of selected research in various phases of home economics in related fields. Sources of research include colleges, universities, and governmental and industrial agencies. C

572-2 to 8 Special Problems. For students recommended by their chairman and approved by the chairman of Clothing and Textiles and the instructor in charge for independent work or directed study. C

582-4 Foundations of Fashion. Anthropological approaches to fashion and socio-economic and psychological forces as determinants of fashion in modern times. Prerequisites: 329, 339, or consent of instructor. C

599-5 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-1 to 48 Dissertation. Minimum of 36 hours for the Ph.D. degree. C

DESIGN

400-0 to 2 Materials and Basic Techniques. Same as 200 and 300. C

465F-5 to 15 Research in Product-Shelter Design. Problems dealing with large groups. All problems carried from conception to actual full-scale construction. Development of prototype for mass-production techniques. Small research projects will be developed under grants given to the department. Prerequisite: 12 hours of 366 or its equivalent. C

465G-5 to 15 Research in Visual Design. Problems dealing with room-to-eye scale and larger, i.e., posters, car cards, strip film, film, exhibitions, etc. Advanced graphic and photographic technology. Development of prototypes for mass-production techniques. Small research projects will be developed under grants given to the department. Prerequisite: 12 hours of 375 or its equivalent. C

490F-2 to 12 Studio in Product-Shelter Design. Special projects, developed with adjunct and visiting professors. C

490G-2 to 12 Studio in Visual Design. Special projects developed with adjunct and visiting professors. C

520-4 to 10 Educational Tool Systems. Designs of specialized instructional tools, including design of learning environments and ancillary support systems for programmed learning. C

530-4 to 12 Studies in the Industrial Process. Design of products and product systems utilizing contemporary technology for solutions to significant human needs. C

535-4 to 12 Research in Product Design. Studies of specialized needs or problem areas (i.e., equipment for the handicapped, needs of underdeveloped areas, etc.). C

540-4 to 12 Studies in Communications Design. Concerned broadly with the over-all systems of human communications, including visual and graphic media. C

545-4 to 12 Research in Communications Design. Specialized areas of visual and graphic communication extended through various technical systems. Development of related systems involving whole range of communications. C

550-2 to 16 Field Study in Design. Design activity (local, national, or international) carried out with a designated faculty member as liaison. Written report assigned and final report required. All projects must first have written approval by the chairman and the liaison faculty member. C

560-4 to 12 Environmental Control. Selected studies in environ control systems, with particular reference to latest technical advances (i.e., closed ecology and autonomous systems developments) and to contributions in the study of human environment control by other disciplines. C

570-4 to 12 Design Science Exploration. Procedural methodology and systems approach to comprehensive anticipatory design science. C

575-4 World Ecological Studies. Review and analysis of man's present socio-economic situation in terms of scientific and technological trending-material and energy resources, human ecology networks. C

576-4 to 8 Structural Evolution. Structural morphology and relational hierarchies in science and technology. Differentiation and evolution of industrial tool complex: analysis of world service industry networks.

599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

ECONOMICS

408-4 Economic and Business Statistics II. Techniques for making decisions when the economic conditions are not known with certainty. 3 hours lecture; 2 hours laboratory. Prerequisite: 307 or GSD 110, or GSD 108c, or GSD 114c, or consent of instructor (C); 307 or GSD 114d (E). CE

411-4 Collective Bargaining and Dispute Settlement. Nature, issues, procedures, economic effects. Analysis of actual collective bargaining situations. Prerequisite: 310 or consent of instructor. CE

416-4 Money and Banking II. Emphasis upon the Federal Reserve System and other banking systems. Prerequisite: 315 or consent of instructor. CE

418-4 Economic History of Europe. A survey of the economic growth of Europe with emphasis upon the development of European agriculture, industry, finance, and international trade since 1750. Prerequisites: 205 or GSB 211a, or consent of instructor (C); 210 (E). CE

419-4 Latin American Economic Development. A survey of the resource base of Latin American economic development with special reference to the problems of transition from an export-import to an integrated industrial economy; monetary policies; problems of economic planning. Prerequisites: 205 or GSB 211a. C

429-4 International Economics. Intensive treatment of the principles of international economics with special emphasis on the classical and modern theories of international trade. Income effects. Balance of payments adjustments. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor. C

430-4 Regional Economy. Natural economic regions, governmental action (as in the T.V.A.), local applications. Prerequisites: (205 and 206) or (214 and 215). C

431-3 Public Finance II. State and local. Prerequisite: 330 or consent of the instructor. CE

432-3 to 4 Fiscal Policy of the United States. Countercyclical, secular, and emergency use of government expenditures, debt, and taxes. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor (C); 210 (E). CE

436-3 Government and Labor. (Same as Government 436.) A study of labor relations and legislation considering both constitutional and economic aspects. Prerequisite: 205 or 215 or GSB 211c or consent of instructor. CE

440-4 Intermediate Micro Theory. A more intensive treatment of price and income theory. Prerequisites: 205 and 206, or 215, or consent of instructor (C); 210 (E). CE

441-4 Intermediate Macro Theory. Basic analytical concepts of the modern theory of aggregative income determination. Prerequisites: 205 or 214 or consent of instructor (C); 210 (E). CE

450-6 (3,3) History of Economic Thought. The development of economic thought; (a) ancients to 1850; (b) 1850 to present. Must be taken in a,b sequence. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor. CE

460-4 Russian Economy. Development of Russian trade, agriculture, industry, gov-

ernment, finance, and standards of living in successive periods in relation to the historical, geographic, economic, and ideological background. Prerequisite: 205, or GSB 211a, or consent of instructor. C

461-4 Comparative Economic Development in Asia. A comparison of the economies of Japan, India, and China within the framework of emerging economic theory of developing economies. Prerequisite: 205, or GSB 211a, or consent of instructor. C

465-4 Mathematical Economics I. A systematic survey of mathematical economic theory. Conditions of static equilibrium (including stability conditions), dynamic models using difference equations, and linear production models of input-output analysis and activity analysis (linear programming). Prerequisite: 440 and consent of instructor C

467-4 Econometrics I. Introduction to resource allocation under uncertainty. Probabilistic economic models, theory of games and economic choices, and stochastic economic processes. Prerequisite: consent of instructor. C

470-3 Business Cycles. Major business fluctuations in the United States. Prices, employment, production, credit, inflation and deflation, and government action during the cycles. Prerequisite: 315, or 441, or consent of instructor (C); 315 (E). CE

471-4 Land Resource Economics. (Same as Forestry 471 and Agricultural Industries 471.) The use of land as an economic variable in production of goods and services; land market; group versus individual conflicts; elementary land resources planning techniques. Prerequisite: 440, or 441, or Agricultural Industries 350, or Forestry 470. C

481-4 (C); 481-3 Comparative Economic Systems (E). Capitalism, socialism, fascism, and other forms of the economy. Prerequisite: 205, or 214 and 215, or consent of instructor (C); 210 (E). CE

490-4 Workshop in Economic Education. (Same as Education 490.) Designed to assist elementary and secondary school teachers in promoting economic understanding in the minds of their students through the translation of economic principles and problems into classroom teaching materials. CE

500-4 to 8 Economics Seminar. A study of a common, general topic in the field of economics, with individual reports on special topics. Prerequisite: 206 or 214 and 215, or consent of instructor. C

501-1 to 5 Economics Readings. Contemporary books and periodicals in economics. Prerequisite: consent of chairman. C

502-1 to 6 Readings in Resource Economics. (Same as Forestry 520B and Agricultural Industries 520B.) Directed readings in the field of resource economics. Prerequisite: consent of instructor. C

512-4 Labor Economics. Economic principles involved in the employment relationship. Such topics as wage theory, the labor market, employment and unemployment, and the economic effect of collective bargaining are covered. Prerequisite: 310, or 411, or consent of instructor. C

517-4 Monetary Theory and Policy. Current monetary theory and policy emphasized. Federal Reserve policy is analyzed. Necessity for coordination of monetary policy with fiscal policy and debt management operations is discussed. Prerequisites: 315 and 441 or consent of instructor. C

519-4 Economic Growth. Intensive examination of the problems (past and present) of economic development faced by nations everywhere. Attention to the alternative solutions which have been, or are being, attempted. Prerequisite: 317 or 418 or consent of instructor. C

530-4 Foreign Trade and Finance. Emphasis on the advanced theory of international trade and finance. Survey of significant literature in international theory. Study of more advanced tools of analysis. Prerequisite: 429 or consent of instructor. C

531-4 Seminar in International Economics. Application of theory to current international economic developments. Empirical studies. Foreign economic policy. Prerequisite: 530 or consent of instructor. C

533-4 Public Finance Theory and Practice. Historical development of public finance theories with analysis of their policy implications. Prerequisite: 330, or consent of instructor. C

541-4 National Income Theory. Keynesian and post-Keynesian developments in national income theory. Empirical research concerned with characteristics and magnitudes of important national income concepts, such as the consumption function, is examined. Recent American policies and problems bearing on national income fluctuations are considered. Prerequisite: 441 or consent of instructor. C

542-4 Price Theory. Designed to develop skills in the use of the analytical tools, including the basic mathematical techniques, used in price theory. Prerequisite: 440 or consent of instructor. C

543-4 Seminar in Economic Policy. A consideration of departures in the American economy from the principle of resource allocation by the price system and an attempt to develop principles of economic policy which could serve as guides in efforts to raise living standards and promote economic growth. Prerequisite: 440 and 441 or consent of instructor. C

552-4 Seminar in Economic Thought. An exploration of the basic philosophic assumptions which underlie the various types of economic thought with special emphasis upon the historical development of the premises of modern economic theories. Prerequisite: 450-6 or consent of instructor. C

562-4 Seminar in Economic Systems. A final, theoretically-oriented examination of economic systems. Includes recent theoretical models; contemporary changes in major economic systems; the emergence of mixed systems. Relates economic, social, and political systems and evaluates attempts to place economic systems within the context of general systems theory. Prerequisite: 481 or consent of instructor. C

566-4 Mathematical Economics II. Linear economic models. Linear programming. Input-output analysis and general equilibrium models. Prerequisite: 440 or 465 or consent of instructor. C

575-4 Economic Regulation. An analysis of the economic causes and effects of the regulation of agriculture, business, and labor. Prerequisite: 440 or consent of instructor. C

581-4 Economics of Welfare. The application of economic theory to the quest for economic welfare. Includes consideration of income distribution, rates of growth, the pricing system, and the role of government. Prerequisite: 440 or equivalent. C

582-0 to 4 Economic Behavior. A theoretical and empirical study of the behavioral aspects of economics, including the behavior of firms, households, and government. This course draws upon the recent literature of economics and also, on frontier areas, upon directly relevant concepts and findings of related behavioral sciences. Prerequisite: 440 or equivalent or consent of instructor. C

599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-3 to 48 Doctoral Dissertation. Hours and credit to be arranged by chairman. C

EDUCATIONAL ADMINISTRATION

420-4 Legal Basis of American Education. Particular emphasis is placed on common-law principles. Prerequisite: 424. CE

424-4 School Administration. Designed primarily for those who look forward to positions as supervisors, principals, or superintendents. Prerequisite: 460. CE

431-4 History of Education in the United States. An historical study of the problems of American Education which have relevance to contemporary education. CE

432-4 Public Opinion, Propaganda, and Education. Analysis and classification of propaganda. Designed to show how public opinion is formed by a use of current materials from the different channels of communication. Differences between propaganda and indoctrination. CE

434-1 to 3 Administrator's Workshop. A special program for the consideration of administrative problems pertinent to superintendents, high school principals, and elementary school principals. Prerequisite: 424. C

456-4 School Supervision. The function of the principal or supervisor in the improvement of instruction. Some activities, methods, and devices for improving the effectiveness of teaching. Prerequisites: 424, and 535 or Elementary Education 557 or Secondary Education 564. CE

- 460-4 Curriculum.** Modern practices and procedures in curriculum development, with attention to the professional, social, economic, and other major factors in curriculum planning. Prerequisite: 500. C
- 485-4 to 9 Educational Utilization of Community Resources.** A workshop providing an opportunity for teachers to acquire a detailed knowledge of community resources, construct teaching units utilizing these resources and assemble files of resource materials dealing with economic and social problems of the community. CE
- 500-4 Research Methods.** Introduction to educational research with practical training in research writing techniques and evaluation in education. Prerequisite: Guidance 422b. CE
- 501-0 to 4 Seminar in Educational Administration.** The interdisciplinary approach to the study of the theory of educational administration. Open to 6th-year and doctoral students only. CE
- 502-4 Seminar in Comparative Education.** Educational ideas and practices of various countries of the world, both Eastern and Western, and their impact upon our culture and education. Prerequisite: consent of instructor. CE
- 502S-4 Seminar in Comparative Education: Soviet Russia.** A study of Soviet education in historical, cultural, political, philosophical, and world perspective. Emphasis is on education in Communist morality and the creation of the "New Soviet Man." Includes a consideration of the challenge to American education and the issue of the study of Communism in our schools. C
- 503-0 to 4 Seminar in Philosophy of Education.** An interpretation of modern educational problems and trends in the light of basic philosophical viewpoints. Excerpts from leading writings will be used. Prerequisite: 554 or consent of instructor. C
- 504-4 Seminar in History of European Education.** A survey and interpretation of education in Europe from the Greek era to the present. Stresses the relationship of European to American education. C
- 506-4 Seminar: Curriculum in Relation to American Culture.** The effect of historical movements on curriculum in our nation at all age and grade levels, continued on a more intensive basis as applied to present-day curricular patterns. Prerequisite: 460 or consent of instructor. C
- 507-12 (4,4,4) The Twentieth Century and Education.** Major movements in the contemporary world are studied in terms of their importance for American Education. C
- 511-12 (4,4,4) Internship Practicum.** The study of theory and practice in school administration pursued simultaneously by the student in cooperation with a public school and the Department. Admission by approval of the Department Advisory Committee. C
- 520-4 Illinois School Law.** Study of the legal aspects of Illinois public education with principal emphasis on statutory law and its interpretation by the courts. Prerequisite: 420. CE
- 525-4 Personnel Administration.** E
- 527-4 to 6 Administrative Problems of Small Schools.** A field laboratory course for principals and superintendents. Prerequisite: 424. C
- 533-4 School Buildings.** Various phases of physical plant design and maintenance of concern to the school administrator. Prerequisite: 424. CE
- 534A-4 School Finance.** A study of the principles and issues of Public School Finance. Revenues, expenditures, indebtedness, and fiscal controls are dealt with. Prerequisite: 424. CE
- 534B-4 School Business Administration.** Principles and practices governing management of business affairs of a public school system. Prerequisite: 424. CE
- 535-4 Research in Problems of School Administration.** An intensive course for school principals on the theory and principles of administration. Prerequisite: 424. C
- 539-4 Community Development Through the School.** Comprehensive survey of the resources of a particular community; the cataloguing of material for the use by the teachers of the community to help determine needed curriculum changes. Prerequisite: 460. C
- 554-4 Contrasting Philosophies of Education.** Deals both historically and contempo-

- raniously with the ideologies which have developed from different concepts of education. Prerequisite: 355 or Philosophy 355 or consent of instructor. CE
- 556-4 Seminar in Educational Supervision.** Special research problems in supervision, for advanced graduate students. Prerequisite: 456. CE
- 563-4 Workshop in School Public Relations.** To meet the needs of teachers, supervisors, and administrators in the area of public relations. Prerequisite: consent of instructor. CE
- 565-4 The Junior College.** E
- 575-1 to 4 Individual Research.** Selection, investigation, and writing of a research project under the personal supervision of a graduate faculty member. Prerequisite: 500, approval of department adviser and consent of instructor. CE
- 576-1 to 4 Readings in Administration and Supervision.** Open only to advanced graduate students. Prerequisite: 501. C
- 589-2 to 12 General Graduate Seminar.** (Same as Philosophy 589.) For students having special interests in the history of philosophy and the original systematic development of philosophic ideas. Prerequisite: consent of instructor. C
- 591-4 Seminar—Social and Philosophical Foundations.** Follows Guidance 590 as second quarter of a two-quarter sequence required of all students who are beginning advanced graduate study for the Ph.D. degree in education. Prerequisite: Guidance 590. C
- 596-5 to 9 Independent Investigation.** Field study required of each student working for the sixth-year certificate. C
- 597-1 to 3, 598-1 to 3, 599-1 to 3. Thesis.** Minimum of 5 hours to be counted toward a master's degree. C
- 600-1 to 48 Dissertation.** Minimum of 36 hours to be earned for the Ph.D. degree. C

ELEMENTARY EDUCATION

- 401-2 Problems in Public School Reading.** Requirements: attendance at all sessions of a reading conference; preparation of a paper showing practical applications of theory to the student's own teaching situation. Summer. C
- 402-4 Aero-Space Education Workshop.** (See Secondary Education 402.) C
- 410-4 Improvement of Instruction in Arithmetic in Kindergarten-Primary Grades.** Recent findings and current practices in building a basis for quantitative thinking in early childhood education. Special emphasis upon grade placement of content and of techniques to aid children in understanding of the number system. Prerequisite: Mathematics 210. C
- 411-4 Seminar in Instruction.** To assist student teachers and in-service teachers in solving classroom problems. Involves clinical study and discussion of behavioral and learning situations, with special attention to the development of characteristics and needs of students. C
- 413-4 Children's Literature.** Emphasizes types of literature, analysis of literary qualities, selection and presentation of literature for children. Not for students who have had English 213. Prerequisite: Guidance 305. CE
- 415-2 to 4 Improvement of Instruction in Arithmetic in the Elementary School.** Items to be taught, the grade placement of content, newer instructional practices and materials of instruction, and means of evaluating achievement. Prerequisite: Mathematics 210 or consent of instructor. CE
- 430-3 Workshop in Creative Writing in the Elementary School.** Techniques of encouraging creative writing in the elementary school. C
- 433-4 Workshop in Elementary Education.** Meets needs of in-service teachers in such areas as curriculum adjustment, remedial teaching, child development, and early childhood education. No credit if student has had 333 or 390. CE
- 435-4 to 8 Workshop in Elementary School Foreign Language Instruction.** Designed to assist elementary school teachers in integrating foreign languages into their teaching program as well as to encourage high school teachers to introduce or supervise foreign languages or education. Prerequisite: basic language credit. CE

437-4 Problems in Reading. Practices and trends in the teaching of reading; materials of instruction in reading, particularly remedial materials; techniques and materials for prevention of reading difficulties; diagnosis and remediation of reading difficulties. Prerequisites: senior standing, 337. Not open to students having had 505. CE

441-4 Teaching Elementary Science. A workshop course for teachers of elementary school science. C

442-4 Materials and Methods in Elementary School Science. Study of content and methods of elementary school science. CE

443-4 Workshop in Social Studies. Material on critical areas of the world, not commonly emphasized in elementary social studies. Areas considered: significant geographical concepts, Asia, Africa, Russia, and Eastern Europe. Outstanding specialists in social science present their specialties. C

465-4 Seminar in Psychology of Elementary School Subjects. Psychological principles of learning applied to the mastery of materials used in elementary school subjects. Prerequisites: 314, Guidance 305. CE

490-2 to 3 Workshop in Economic Education in Elementary Schools. A study of newer programs stressing economic understandings of the social studies in the elementary school. C

505-4 Improvement of Reading Instruction. First course in the reading sequence, survey of reading problems, aspects of the reading process, modern practices in teaching reading. CE

507-2 to 4 Readings in Reading. Independent reading; acquaintanceship with the literature and research in reading. Conference periods. CE

509-4 to 8 Practicum in Reading. For advanced students; teaching demonstrations and evaluations. Each student works with a group of reading disability cases. C

510-4 to 8 Seminar: Problems in Reading. Major field content seminar: Problems and practices; comprehensive review and evaluation of research and literature. Each student pursues a problem of his own interest. C

514-4 Organization and Administration of Reading Programs. For reading specialists, principals, supervisors, consultants. Recent trends in elementary and high school reading programs, providing reading instruction for total school population, materials and equipment, in-service training, role of the reading specialist. Problems of class members are studied and discussed. Prerequisite: 461. CE

515-4 Special Problems in the Teaching of Arithmetic in the Elementary School. A seminar course which covers important problems in arithmetic in the elementary school. Variable content. Prerequisite: 415 or consent of instructor. CE

516-8 to 12 Internship in Reading. Culminating experience for doctoral candidates. Each student supervises reading services in his own or co-operating school. Conference periods. C

517-2 to 4 Kindergarten-Primary Practicum. Practical applications of advanced theory in the Laboratory School. Readings and research related to special problems in the kindergarten-primary classroom. Prerequisite: 8 hours of student teaching. C

518-2 Supervision of Student Teachers. The function of the supervisory teacher in the student teacher situation. Particular attention to the problem of student teaching in the public schools. A course for present and prospective teachers who wish to be more effective in dealing with student teachers. CE

521-9 (3,3,3) (C); 521-3 to 4 (E). Diagnosis and Correction of Reading Disabilities. Causes of reading difficulties; observation and interview procedures; standardized tests, instruments, and informal inventories; analysis techniques; experiences in preparing materials for corrective purposes. Each student diagnoses and treats a reading disability case under supervision. Prerequisite: 505 or 540 or concurrent registration with 505. CE

525-4 Kindergarten-Primary Seminar. Exploration of research literature on problems in early childhood education. Each student to select problem or problems and to present paper to the seminar. Prerequisite: Educational Administration and Supervision 500 or equivalent. C

537-4 Kindergarten-Primary Reading. A survey of problems in the developmental

reading program for the primary grades, followed by extensive study of selected problems. Prerequisite: 337 or consent of instructor. C

541-4 Selected Teaching and Curriculum Problems in Elementary School Science. Aims, methods, materials, and equipment. Emphasis upon grade placement of materials and use of community resources. CE

542-3 to 4 Language Arts in the Elementary School. The practical bearing of investigation and theory on the improvement of current practices in the teaching of the language arts, other than reading. Attention given to evaluation of teaching materials in these areas. CE

543-4 Teaching the Social Studies in the Elementary School. Organization of material for teaching purposes, techniques of classroom presentation, bibliographies or materials, use of audio and visual aids to instruction, and techniques for evaluating student progress. Readings, lectures, and discussions related to required teaching experience. No credit for students having had 544. CE

557-4 The Elementary Principalship. Designed to meet many of the particular needs of persons interested in qualifying for appointments as elementary school principals. Other than the administrative responsibilities of the elementary principal, such topics as the grouping of pupils, the elementary school's program, and personnel are studied. CE

558-3 to 4 Leadership in Elementary Education. A study of some newer developments in the organization and instruction of the elementary school. Team teaching, a non-graded school, grouping and the impact of newer curricular developments. C

559-4 Workshop in Instructional Leadership. CE

560-4 Kindergarten-Primary Education. A survey of current problems and practices in early childhood education for children from four to eight years of age, with emphasis on wide reading in current research literature. Prerequisite: consent of instructor. C

561-4 The Elementary School Curriculum. A critical study of the reorganization, construction, and administration of the elementary school curriculum, and the installation, adaptation, and administration of the revised curriculum. CE

563-4 Organization of the Elementary School. An analysis of types of elementary school organization with special attention to influence of school organization upon the educational program. Application of research findings to selection and use of materials of instruction. Special consideration to student's professional problems. CE

570-2 to 4 Seminar, Research in Elementary Education. Critical analysis of the most significant research studies in organization, learning, teaching, and curriculum in the elementary education. C

575-2 to 4 Individual Research. The selection, investigation, and writing of a research topic, under the personal supervision of a member of the departmental graduate staff, in one of the following areas: (a) curriculum, (b) supervision, (c) language arts, (d) science, (e) reading, (f) social studies, (g) problems in elementary education, (h) arithmetic, (j) problems in kindergarten-primary, (k) elementary education administration and supervision. CE

596-5 to 9 Independent Investigation. Field study required of each student working for the sixth year professional certificate. The work should be done in the setting of a school system where the student is employed or where full co-operation is extended. The study involves selecting of the problem, survey of pertinent literature, recording of results, and appropriate interpretations and summarizations. C

597-1 to 3, 598-1 to 3, 599-1 to 3 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-1 to 48 Dissertation. Minimum of 36 hours for the Ph.D. degree. C

ENGINEERING

401-9 (3,3,3) Principles of Propulsion. (a) The basic principles of propulsion dynamics. (b) The thermodynamics of fluid flow and application to propulsion engines. (c) An extensive treatment of the technological problems in the design of propulsion systems. Must be taken in a,b,c sequence. Prerequisite: 300C. C

406-3 Statistical Mechanics. Introductory subject for graduate engineering students. Classical mechanics of systems of particles and motion in phase space. Quantum mechanical concepts and energy of microscopic systems. Most probable distribution. Determination of thermodynamic properties of gases, crystals, black body radiation field. Fluctuation theory. Application to plasmas, thermionics, masers, cryogenics. Prerequisites: 461, Mathematics 305b. C

412-9 (3,3,3) Engineering Practice. (a) Written communication encountered in engineering organizations: correspondence, memoranda, technical papers, specifications, and reports. Lectures, conferences, and frequent written assignments are adapted to the individual needs of each student. (b) The law of contracts with enough emphasis on legal procedure to enable students to understand decided cases. If possible, the study of the legal material will be followed by practice in applying some of the principles. (c) Research methods. Must be taken in a,b,c sequence. Prerequisite: 361. C

413-6 (3,3) Intermediate Mechanics of Fluids. (a) The dynamics of viscous and compressible fluids. (b) Shock waves, one and two dimensional flow. (c) Boundary layer and shock wave theory. Must be taken in a, b sequence. Prerequisite: 313. C

415-9 (3,3,3) Water Supply and Waste Water Disposal. (See Applied Science 415.) C

423-3 Hybrid Computation. The simultaneous use of the analog and the digital computer for the solution of engineering problems. Scaling of problems. Block diagrams and logic are stressed. Linear and non-linear differential equations. Simulation as well as iterative analog computation are covered. Prerequisites: Applied Science 222 or Mathematics 225. C

439-6 (3,3) Transient Analysis. A study of electrical and mechanical networks by means of the Laplace Transform. Theoretical vibration problems in the real and complex time domain, as they apply to engineering will be discussed. Prerequisites: 335, Mathematics 305b. C

445-9 (3,3,3) Structural Design. (a) General principles of structural design. Probabilities of failure or unserviceability. Factor of safety. Ultimate versus elastic design. Stress control and erection of indeterminate structures. Economics and preliminary planning of structures. Approximate analysis of beams, trusses, frames, and slabs. Preliminary design of indeterminate structures. (b) Consideration of behavior and modes of failure of typical metal structures, structural components, and connections as affected by design features, service conditions, and material properties. Comprehensive review of methods of plastic analysis and design of steel structures. Correlation of buckling behavior of structures and structural members with buckling criteria and requirements. (c) An introduction to the design of reinforced concrete structures, behavior of beams, columns and frames, proportioning of members. Laboratory. Must be taken in a,b,c sequence. Prerequisites: 311, 344. C

446-9 (3,3,3) Mechanical Energy Conversion. (a) Modern power plant cycles, pumps, fans, fuels, steam generator boiler auxiliaries, and heat exchangers. (b) A detailed study of the design and operation of steam turbines. (c) The theory and design of gas turbines and jet engines. Must be taken in a,b,c sequence. Prerequisite: 346. C

461-6 (3,3) Advanced Mechanics. (a) Stress and strain at a point in three dimensions. Introduction to the theory of elasticity with examples of solutions in two dimensions. Consideration of bending of flat plates; energy methods in elasticity; elastic stability problems. (b) The foundation of dynamics leading to Lagrange's equations and Hamilton's principle. Gyroscopic effects in mechanical systems. Analysis of the stability of steady motions. Self-excited vibrations and non-linear vibrations. Must be taken in a,b sequence. Prerequisite: 260. C

462-6 (3,3) Theory of Elasticity. (a) The linear theory of homogeneous, isotropic; elastic media. Analysis of stress and strain. (b) The solution of differential equations of elasticity by numerical inverse, energy, and complex variable methods. Must be taken in a,b sequence. Prerequisite: 461. C

502-9 (3,3,3) Advanced Heat Transfer. (a) The treatment of heat transfer problems involving distributed heat sources in laminar and turbulent shear flow. (b) Discus-

sion of boundary layer temperature distributions in systems with and without heat sources. (c) Discussions of analogies used in convective heat transfer. May be taken in a,b or b,a sequence. Prerequisite: Graduate standing. C

503-9 (3,3,3) Heating and Cooling Systems. (a) The applications of heating and cooling to engineering systems. (b) The design of various systems, including automatic controls. (c) A study of research methods and new concepts in cooling devices. May be taken in any sequence. Prerequisite: graduate standing. C

510-9 (3,3,3) Electromagnetic Fields. Static boundary value problems, conformal transformation; Schwarz-Christoffel transformation; harmonics; application of Maxwell's equations to plane waves in dielectrics and conductors, antennas, and radiation. Prerequisite: consent of instructor. C

511-6 (3,3) Quantum Electronics. An introduction to quantum theory with applications taken from the field of electronics. A study of plasmas, fusion, atomic structure, superconductivity from a theoretical engineering view. Prerequisite: consent of instructor. C

516-4 Water Resources Development. Seminar on engineering problems and economic factors relating to multiple-purpose water resources development. Planning of design features of components for system performance. The integrated use of water from all sources: ground and surface water, waste water, and saline water. Modern trends of large-scale land reclamation, hydropower, tidal power, and pump-storage schemes. Prerequisite: 415. C

517-12 (4,4,4) Analysis and Design of Engineering Systems. (a) Application of general system concepts to wide range of physical and engineering processes. Emphasis on variable flow of matter, energy, entropy, and information directed toward predicting performance for specified designs. Introduction of central theme of functional reticulation into multiported elements. Systematic study of relations and interactions in terms of logical operations, transformations, matrices, ordinary and partial differential equations, signal flow graphs, block and bond diagrams, analogies, and computing systems. Lectures and problem work cover electrical, mechanical, fluid, thermal, chemical, nuclear and biological systems. Prerequisites: Mathematics 305b, Engineering 300, 311, 335. (b) Emphasis on the synthesis and design of systems assembled from multiported primitives to accomplish specific tasks and functions. Particular attention given to the use of analog and digital computers as electronic models for studying alternative designs and modes of operation. Lectures and problems dealing with stochastic processes and variables, in both frequency and time domains, and with stationary and nonstationary parameters. Substantial portion of time allotted to original studies on a team basis using available electronic computers. (c) Advanced engineering systems designs. C

ENGINEERING TECHNOLOGY

412-9 (3,3,3) Engineering Practice. C

437-9 (3,3,3) Industrial Electronics and Communications. Theory of active networks; radio communication, radar, television. Prerequisite: 335. C

ENGLISH

400-4 The Structure of English. An introduction to the methods of descriptive linguistics as applied to English: the phonemics, morphemics, and syntax of English. Recommended for those preparing to teach English. CE

403-4 The History of the English Language. A survey of the development of the language from Indo-European to modern English with special emphasis on Middle and Early Modern English changes. CE

404-8 (4,4) Middle English Literature. (a) Contemporaries and successors of Chaucer: late 14th and early 15th century literature, from *Sir Gawayne and the Grene-Knight* to the Scottish Chaucereians, (b) Chaucer. May be taken singly. CE

405-8 (4,4) Descriptive Linguistics. (a) Phonetics and phonemics, an analysis of language structure from phone to phoneme; (b) morphology and syntax, an analysis

- of language structure from morph to sentence, with emphasis on immediate constituent analysis. May be taken singly. Prerequisite: consent of instructor. CE
- 412-12 (4,4,4) English Nondramatic Literature.** (a) 16th century, (b) 17th century, (c) 18th century. May be taken singly. CE
- 417-4 Victorian Literature.** E
- 420-8 (4,4) American Poetry.** (a) Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets, (b) the more important poets since 1900. May be taken singly. Prerequisite: 309a or 309b. CE
- 421-16 (4,4,4,4) English Poetry.** (a) Early Romantics: major emphasis on general background and on Blake, Coleridge, and Wordsworth; (b) later Romantics: emphasis on Byron, Shelley, and Keats, the minor figures; (c) Victorian poets: Tennyson, Browning, Arnold, and other poets of England, 1830-1900; (d) modern British poets. May be taken singly. CE
- 431-12 (4,4,4) Major American Writers.** Significant writers of fiction and non-fictional prose from the Puritans to the 20th century. (a) 1620-1800, (b) 1800-1865, (c) 1865-1915. May be taken singly. CE
- 438-4 Intellectual Backgrounds of American Literature.** The relationship of basic ideas in America to American literature. Prerequisite: 309a or 309b. CE
- 441-4 The 18th Century Essay.** The informal essay and the literary periodicals—*The Spectator*, *Tatler*, *Guardian*, *Rambler*, *Idler*, and Goldsmith's *Citizen of the World* ("Chinese Letters"). CE
- 443-4 Victorian Prose.** The chief writers of nonfiction prose from the late romantics to 1900. Prerequisite: 302c. CE
- 447-4 American Humor and Satire.** A consideration of the writers and forms of 19th and 20th century humor. CE
- 454-12 (4,4,4) English Fiction.** (a) 18th century: Defoe through Jane Austen, (b) Victorian novel: 1830-1900, (c) 20th century. May be taken singly. CE
- 456-4 Modern Continental Fiction.** Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse. CE
- 458-8 (4,4) American Fiction.** (a) The novel in America from its beginnings to the early 20th century, (b) trends and techniques in the American novel and short story since 1914. May be taken singly. CE
- 460-16 (4,4,4,4) British Drama.** (a) Elizabethan drama: from the beginning of the drama in late Middle Ages through its flowering in such Elizabethan playwrights as Greene, Peele, Kyd, Marlowe, Heywood, Dekker, but excluding Shakespeare; (b) Jacobean drama: the Jacobean and Caroline playwrights: Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley; (c) Restoration and 18th century drama: after 1660, representative types of plays from Dryden to Sheridan; (d) modern British drama. May be taken singly. CE
- 464-4 Modern Continental Drama.** The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal. CE
- 468-4 American Drama.** The rise of the theater in America, with readings of plays, chiefly modern. Prerequisite: 309a or 309b. CE
- 471-8 (4,4) Shakespeare.** (a) The plays before 1600, (b) the plays of 1600 and later. Readings on the life of Shakespeare, the theater, and the acting company. May be taken singly. CE
- 473-4 Milton.** CE
- 485-4 Problems in the Teaching of English.** Aims, methods, materials, tests, programs, and other aspects of English instruction in the high school. CE
- 486-2 to 8 Workshop in High School English.** Intensive study in lectures, laboratory, conferences, to arrive at agreement on the teaching of English in high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field. CE
- 487-2 to 8 Workshop in Junior High School English.** Intensive workshop study in lectures, laboratory, conferences on the teaching of English in junior high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field. E

- 488-9 (3,3,3) Methods of Teaching English as a Foreign Language.** (a) Classroom techniques, (b) laboratory methods, (c) preparation of materials. Restricted to English as a Foreign Language students and must be taken in a,b,c sequence. CE
- 492-8 (4,4) Professional Writing.** Must be taken in a,b sequence. Prerequisite: 392 or consent of instructor. CE
- 495-8 (4,4) Literary Criticism.** (a) History of criticism: ideas and techniques from Aristotle to the end of the 19th century, (b) modern criticism: recent critics and critical attitudes, and practice in writing criticism. CE
- 499-2 to 6 Readings in English.** For English students only. Departmental approval required. No more than four hours may be taken in any one quarter. CE
- 500-2 Materials and Methods of Research in English.** The principal tools of literary scholarship and the more important studies and journals. Practice in the preparation of selective bibliographies and scholarly reports. CE
- 501-4 Old English Grammar.** The development of the forms, the grammar, and readings. CE
- 502-4 Beowulf.** Readings of the poem and study of its form, language, and history. Prerequisite: 501. CE
- 504-4 Advanced English Syntax.** A study of generative grammars. Prerequisite: consent of instructor. CE
- 505-4 Contrastive Linguistic Structures.** A comparison of the structure of English with the structure of a second language. Prerequisite: consent of instructor. CE
- 508-4 or 8 Studies in Chaucer.** Problems in Chaucer, scholarship and criticism. Prerequisite: 404b or consent of instructor. CE
- 509-4 or 8 Studies in Middle English Literature.** At the discretion of the instructor, (a) readings chiefly in Early Middle English with attention to the grammar and phonology of the dialects, (b) a study of Middle English literature exclusive of Chaucer or of one of the more literary types, the scholarship and criticism. CE
- 511-4 or 8 Studies in the Renaissance.** Individual research problems involving the use of primary source materials in extensive microfilm and microcard collections. CE
- 513-4 or 8 Studies in 17th Century Literature.** CE
- 514-4 or 8 Studies in Restoration and 18th Century Literature.** CE
- 519-4 or 8 Studies in Contemporary British Literature.** CE
- 520-4 or 8 Studies in Romantic Writers.** CE
- 521-4 or 8 Studies in Victorian Poetry.** CE
- 524-4 or 8 Studies in the Metaphysical Poets.** CE
- 531-4 or 8 Studies in American Colonial Period.** E
- 532-4 or 8 Studies in American Transcendentalism.** CE
- 534-4 or 8 Studies in Early 19th Century American Writers.** CE
- 536-4 or 8 Studies in Later 19th Century American Writers.** CE
- 537-4 or 8 Studies in 20th Century American Writers.** CE
- 538-4 or 8 Problems in American Literature.** Study of a topic, concept, or idea as it appears in American writing. CE
- 543-4 or 8 Studies in Victorian Nonfiction Prose.** CE
- 555-4 or 8 Studies in the Victorian Novel.** CE
- 560-4 or 8 Studies in Renaissance Drama.** CE
- 566-4 or 8 Studies in Shakespeare.** Detailed study of a limited number of the major plays: historical and technical problems considered in the light of recent scholarship in the field. Prerequisites: 471a or 471b or equivalent. CE
- 569-4 Seminar in Special Problems of English as a Foreign Language.** Independent study in preparing and testing of instructional materials for the teaching of English as a foreign language. Restricted to English as a Foreign Language students. CE
- 579-4 to 16 (4 or 8, 4 or 8) Studies in Modern Literature.** (a) Offered fall quarter, (b) offered winter quarter. CE
- 580-4 Traditional Themes.** Persistent themes and legends in literature—King Arthur, Faust, Utopia, and the like. CE
- 581-12 (4,4,4) Problems in High School English.** (a) Composition, (b) linguistics, (c) literature. CE
- 585-2 to 8 Teaching College Composition.** Objectives, methods, and materials for

- the course; observation; and practice under supervision. CE
 586-2 to 8 Teaching College Literature. Chief emphasis on freshman and sophomore literature; objectives; methods, materials; observation; and practice under supervision. CE
 597-2 to 4 Readings in Linguistics. Individual readings in linguistics under the guidance of a staff member. CE
 598-1 to 9 Independent Review of English and American Literature. CE
 599-2 to 9 Thesis. CE
 600-1 to 4S Dissertation. CE

FOOD AND NUTRITION

- 404-4 Personal and Community Nutrition. The role of food and nutrition in personal and community health and in emergency feeding programs. Field trips. Prerequisite: 320 or equivalent. C
 481-2 to 6 Readings. Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department. C
 490-4 Nutrition and Physical Growth. Lectures, readings, and discussion on nutrition in relation to human growth, pregnancy through adolescence, and its practical applications. Prerequisite: 320 or consent of instructor. C
 500-4 Research Methods. Study of methods employed in research in food and nutrition. The development of a research design selected on the basis of the interest and need of the student. Field trips. Prerequisites: 359 or 356, Guidance 422b (422b may be concurrent), or consent of instructor. C
 515-1 to 6 Seminar. Staff and student participation in reports and discussion on assigned research papers, research in progress and/or current professional meetings. Recommended for all graduate majors in food and nutrition. Prerequisite: consent of instructor. C
 556-4 Advanced Experimental Food. Experimental approach to the study of the chemical and physical properties of selected foods; laboratory investigation of a problem in food research and guided work in interpretation of research data. Field trips. Prerequisite: 356 or consent of instructor. C
 571-4 Recent Research. Review of selected research in various phases of home economics in related fields. Sources of research include colleges, universities, and governmental and industrial agencies. Offered on demand. C
 572-2 to 8 Special Problems. For students recommended by their chairman and approved by the head of the department and the instructor in charge for independent work or directed study. C
 580-4 Recent Developments in Nutrition. Critical study of recent scientific literature in nutrition. Prerequisite: 320 or equivalent. C
 581-4 Recent Trends in Foods. An evaluation of recent literature on food preparation principles and the commercial development of prepared foods for home use. Prerequisite: 335. Offered on demand. C
 599-5 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

FOREIGN LANGUAGES

The following courses do not fall within the normal pattern of courses leading to advanced degrees:

- 161-0 French for Graduate Students. C
 161-0 German for Graduate Students. C
 161-0 Russian for Graduate Students. C
 161-0 Spanish for Graduate Students. C

The purpose of these courses is to help graduate students prepare for proficiency examination as requested by the Graduate School for the Ph.D. degree. No prerequisite. Students must register for these courses and are advised to take them as part of it, and not in addition to, their graduate program.

435-4 to 8 Workshop in Elementary School Foreign Language Instruction. Designed to assist elementary school teachers in integrating foreign languages into their teaching program as well as to encourage high school teachers to introduce or supervise foreign languages at the elementary school level. To count as education or foreign languages. Prerequisite: basic language credit. CE

486-8 (4,4) Materials and Methods for Teaching Foreign Languages. Application of language learning principles to classroom procedures at different levels. Theory and practice of the audio-lingual approach, the language lab, applied linguistics. Required for all majors intending to teach foreign languages. Prerequisite: one quarter of any 300-level course, or consent. E

FRENCH

400-4 French Literature Between 1870 and 1914. A survey of French literature from 1870 to 1914. Prerequisite: 313. C

401-6 (3,3) 17th Century French Drama. C

403-3 French Literature of the 18th Century. Drama and Novel. C

405-3 French Contemporary Novel. A study of the novel from 1900 to the present with detailed attention to Proust and Gide. C

406-3 French Poetry from 1850 to 1900. The Parnassian and Symbolist Movements in French poetry. C

407-3 French Poetry Since 1900. A study of French poetry from 1900. C

451-6 (2,2,2) Seminar. Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization. Required of all French senior majors. E

461-4 French Stylistics. Study of writing style in French and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of French grammar and composition. Prerequisite: 9 hours of 300-level courses. E

500-2 Seminar in Contemporary French Literature. *The Roman fleuve* as exemplified in the works of Duhamel, Martin du Gard, and Romains. CE

501-2 to 10 Seminar on a Selected French Author. Intensive study of one author—his life, his work, and his place in the literary and cultural developments of civilization. (a) Balzac, (b) Baudelaire, (c) Moliere, (d) Montaigne, (e) Proust. CE

502-3 French Literature from *La Chanson de Roland* to Rabelais. French literature from the early epic to Rabelais. C

503-3 Rabelais and Montaigne. A study of the works of Rabelais and Montaigne. C

504-3 La Pléiade. The development of lyric poetry in the Renaissance. C

507-3 A Study of Romanticism in France. C

510-4 French Literature from 1850 to 1900. C

511-3 20th Century French Drama. French drama from 1900 to the present. C

515-3 Old French. Readings from the *Chanson de Roland* and the prose chronicles. Prerequisite: 410 or equivalent. C

520-4 Graduate Composition and Diction. Composition based on study of contemporary French authors; individual work in pronunciation and diction determined by entrance tests. C

543-2 to 6 Research Problems. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis. C

544-6 French Language and Culture. Daily lecture in French on selected aspects of French culture, followed by daily classes in the development of audio-lingual skills through cultural content, followed in turn by daily classes in reading and writing. Prerequisite: the bachelor's degree with emphasis in foreign languages. E

545-3 Applied Linguistics and Remedial Phonetics. Fundamentals of linguistics with particular reference to their application to classroom procedures in the teaching of French, plus the analysis and correction of individual pronunciation difficulties. Prerequisite: the bachelor's degree with emphasis in foreign languages. E

546-3 Professional Preparation. Principles and practice of teaching foreign languages. Analysis of current trends and methods. Effective use of modern materials and techniques in the foreign language classroom. Visual aids, the language laboratory, text-

books, testing, organization of foreign language courses on various levels. Prerequisite: the bachelor's degree with emphasis in foreign languages. E
 599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

GERMAN

Language and Literature

- 401-4 (2,2) **Goethe's Faust.** (a) the Faust legend and early Faust books and plays; the genesis of Goethe's *Faust*: reading of Part I. (b) reading of Part II; study of symbolism such as blending of paganism with Christianity, ancient Greek culture with Germanic culture. Must be taken in a,b sequence. CE
- 403-3 **German Ballads and Lyrics.** A selective study of the foremost examples of German balladry and lyric poetry, ranging from the poetry of Klopstock and Bürger to that of Hesse, Benn, etc. Lectures, recitations. C
- 404-4 **Weimar and Its Aftermath.** German writings from the inception of the Weimar Republic to the end of W.W. II, with special reference to the correlation existing between literary expression and social, economic and political conditions. C
- 406-3 **The German Comedy.** Comic and satirical works in German Literature, with special emphasis on the "Lustspiel" since 1800; lectures, reports. C
- 407-2 **Great German Plays of the 20th Century.** Study and selective readings of outstanding stage successes; lectures, reports. C
- 408-4 **German Civilization.** Intensive study of the German speaking areas of the world, with emphasis on the anthropological and sociological aspects of their respective cultures (Austrian, German, Swiss, "Reichs-deutsch," etc.); lectures, reports. C
- 411-6 (3,3) **Middle High German.** (a) Grammar, and selective readings in both MHG originals and NHG translations of such epics as the Nibelungenlied and Gudrun. (b) The courtly epic poetry of such authors as Wolfram von Eschenbach, Gottfried von Strassburg, Hartmann von Aue, the lyric poetry of Walther von der Vogelweide, and didactic prose. C
- 451-6 (2,2,2) **Seminar.** Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization. E
- 497-1 to 2 **Readings in 18th Century German Literature.** Departmental approval required. C
- 498-1 to 2 **Readings in 19th Century German Literature.** Departmental approval required. C
- 499-1 to 2 **Readings in 20th Century German Literature.** Departmental approval required. C
- 500-2 **Seminar in Contemporary Literature.** Intensive study of the works of representative German authors, with special reference to the correlation existing between literary expression and social, economic, and political conditions since 1900. Lectures, outside readings, reports. C
- 501-2 **Seminar on a Selected German Author.** Intensive study of one author—his life, his work, and his place in the literary and cultural development of civilization. Lectures, outside readings, reports. C
- 509-4 (2,2) **Old High German.** (a) Phonology, morphology, etymology, syntax. (b) Continued study of grammar and readings of Franconian Bavarian, and Alemannic texts. C
- 511-3 to 9 **Thesis or Research in German Literature.** For students who are writing a thesis or making advanced graduate study of some phase of German literature. Lectures, compilation of bibliographies, other research techniques, papers. 2 to 4 hours each (maximum of 9 hours). C
- 512-3 **19th Century German Novel.** German literature from the decline of Romanticism to the end of the century. A study of trends and representative works of such authors as Keller, Fontane, Raabe, etc. Lectures, reports. C
- 513-3 **20th Century German Novel.** Continuation of 512. Study of representative writers of expressionism, "Neue Sachlichkeit," etc. Lectures, reports. C
- 514-3 **Seminar in Folklore.** Study of German folk literature, with emphasis on folk

tales (such as Grimms' Household Tales, regional sagas, etc.), chapbooks (such as Dr. Faust, Till Eulenspiegel, etc.), folksongs (Des Knaben Wunderhorn), and folk drama. Lectures, reports. C

543-2 to 6 Research Problems. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis. C

544-9 NDEA German Institute. Summer Institute for Teachers of German. C

591-2 to 6 Seminar on Kant. A selective study of the works of Immanuel Kant, with special emphasis on the influence exerted by Kantian philosophy on subsequent German literature. Course counted on a major in philosophy, subject to the consent of the Department of Philosophy. Lectures, outside readings, reports. C

RUSSIAN

Language and Literature

414-3 Russian Poetry from Zhukovsky to 1920. A study of Russian Poetry from Sentimentalism through Symbolism. C

425-3 Soviet Literature. A study of satirists and writers of everyday life. Constructivism and followers; Soviet literary criticism. Lectures, readings, and reports. C

452-4 Advanced Composition and Conversation. Oral and written composition of a practical nature for advanced students; emphasis on study of idiomatic expressions and current usage. C

509-3 Russian Literature of the 17th Century. A study of early Russian literature with emphasis on literature of the Kievan period. Analysis of texts and reports. C

510-3 Russian Literature of the 18th Century. The Baroque period, classicism and sentimentalism. Emphasis on the classical period of the 18th century. Analysis of texts and reports. C

514-4 (2,2) History of the Russian Language. A survey of the phonological, morphological, and syntactical changes from the period of the common Slavic to the present Russian literary language. C

520-4 Russian Linguistic Structure. A structural analysis of present-day Russian with special attention to Russian syntax. Free composition on Russian authors. C

543-2 to 6 Research Problems. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis. C

SPANISH

(Iberian)

401-3 Spanish Novel of the 19th Century. Study of representative novels of Fernán Caballero, Valera, Pereda, Galdós, etc. C

402-3 Spanish Drama of the 18th and 19th Centuries. Reading of representative plays of the chief dramatists from Moratin to the Generation of 1898. C

403-3 Spanish Poetry. General survey of Spanish poetry from its beginnings to 1900. C

404-3 Spanish Literature of the 20th Century: Novel and Essay. Main trends of the Spanish novel and essay since 1900. C

415-3 Spanish Phonetics. Analysis of the sounds of Spanish and their manner of production; intonation; levels of speech; oral practice. C

440-6 (3,3) The Golden Age: Drama. Plays of Lope de Vega, Calderón, Tirso de Molina, Ruiz de Alarcón, and others. C

445-4 Cervantes. Don Quixote; Other works assigned as collateral readings. C

461-4 Spanish Stylistics. Study of writing style in Spanish and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of Spanish grammar and composition. Prerequisite: 9 hours of 300-level courses. E

501-2 Seminar on a Selected Spanish Author. Study of one author—his life, his works, and his relationships to the literary and social currents of his time. C

505-3 The Picaresque Novel. Study of the *Lazarillo*, with collateral readings of other masterpieces of this genre. C

506-3 The Renaissance. Literature of the Renaissance in Spain, including the drama, the novel, the lyric poetry, and the histories of the Indies. C

- 515-3 Old Spanish. *Poema de mio Cid* and other medieval writings in Spanish. Prerequisite: 410 or equivalent. C
- 520-3 Seminar in Syntax. Stylistics and grammatical analysis. C
- 525-3 The Spanish Ballads. The *romance* studied as a part of the literature and folklore of Spain and the New World. C
- 543-2 to 6 Research Problems. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis. C
- 599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

SPANISH

(American)

- 421-3 Survey of Modernism in Spanish American Poetry. Study of its origins, characteristics and achievements. C
- 422-3 Contemporary Spanish American Poetry. Spanish American poetry since modernism. C
- 423-3 to 4 The Mexican Novel of the 20th Century. Emphasis on fiction dealing with the Revolution and related social problems. C
- 424-3 to 4 Gaucho Literature. Study of the Gaucho as a social class and of the types of literature developed to portray and symbolize his way of life, attitudes and values. C
- 426-3 The Mexican Short Story. Survey of the Mexican short story from pre-Conquest to the present. C
- 427-3 Spanish American Drama. Study of representative works of Florencio Sánchez, Rodolfo Usigli, Armando Moock, Samuel Eichelbaum, Xavier Villarrutia, and others. C
- 451-6 (2,2,2) Seminar. Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization. E
- 478-4 Seminar in Latin American Thought. (See Philosophy 478.) C
- 500-2 Seminar in Latin American Fiction. The works of a specific novelist or group of novels on a similar theme studied as a reflection of social and cultural conditions in a country or geographical area. C
- 535-3 Mexican Essayists of the 19th Century. Currents of Mexican thought in the 19th century. C
- 538-3 Seminar on Spanish American Poetry. Study of the works of a single poet, of a group of poets or of literary trends or movements such as *creacionismo*, *ultraísmo*, etc. C
- 541-3 Seminar on Spanish American Literary Criticism. Significant documents of literary criticism from Independence to the present. C
- 543-2 to 6 Research Problems. (See Spanish—Iberian.) C
- 599-2 to 9 Thesis. C

ROMANCE PHILOLOGY

- 410-4 Romance Philology I. Survey of phonology, morphology, and syntax changes in Romance languages in general; special attention to the developments in French and Spanish for majors in these fields. C
- 514-4 Romance Philology II. Studies in syntax of Old French and Old Spanish. Continued. C
- 516-4 Arthurian Romance. Readings in the Arthurian Romances of the student's major interest (French or Spanish) with reference to the genre as a whole. Prerequisite: 410 or equivalent. C

FORESTRY

- 410-3 Forest Management for Wildlife. Interrelations between forest practices and game. Forest protection from mammals and birds. Emphasis is on treatment of the forest. Prerequisite: Zoology 463, forestry major or consent of instructor. C
- 440-4 Ecology of Grasses and Grasslands. (Same as Botany 440.) Structure, anal-

ysis and dynamics of grassland communities; structure and growth of individual species. Prerequisite: GSA 340 or consent of instructor. C

450-4 Forest and Park Administration. Fundamentals of management and administration of recreation forests. Development of forest and suburban parks under a forest environment. Review of current local, state, and Federal legislation applicable to forest recreation. C

464-4 Advanced Silviculture. Analysis and measurement of site quality; stand density; growth as related to site factors and competition; factors affecting reproduction; the tree as a variable. Prerequisites: 365a,b. C

465-2 Forestry Field Studies. An extended trip to study forest conditions and silviculture in different forest regions of the United States. Cost shared by students. Prerequisites: 330, 363a, 365a. C

466-3 Forest Watershed Management. Effects of treatment of forested watersheds on quality and quantity of water yield. Consideration of alternative in water use and flood control. Prerequisites: Plant Industries 301, GSA 330, or consent of instructor. C

470-8 (4,4) Economics of Forestry. (a) Introduction to forest economics; forestry production and investment. Prerequisite: GSB 211a. (b) Forestry marketing, macroeconomics and planning. Prerequisite: 470a or consent of instructor. C

471-4 Land Resource Economics. (See Economics 471.)

476-3 Cases in Forest Management. A series of case studies analyzing governmental and industrial forest management plans and the objectives of forest management by top level management. C

520a-1 to 6 Readings in Forestry. Directed readings in selected subjects. C

520b-1 to 6 Readings in Resource Economics. (See Economics 502.) C

570-3 Principles of Research. Research philosophy, approaches to research; theory, hypotheses, inference and prediction; problem identification, project development and organization; methods of data collection, analysis and presentation; drawing conclusions and organizing results. Prerequisite: 4 hours in statistical methods, or consent of instructor. C

575-1 to 6 Research. Directed research in selected fields of forestry. C

581-1 to 6 Seminar. Study and discussion of forestry problems. C

599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

GEOGRAPHY

402-7 (4,3) Advanced Physical Geography I. Deals with one or more of the following land forms, climate, soil, and water; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 302 or consent. CE

403-7 (4,3) Advanced Physical Geography II. Content drawn from same broad range of topics as 402. To be alternated with 402 to enable student to specialize further in physical geography. Prerequisite: 302 or consent. CE

404-7 (4,3) Advanced Economic Geography I. Deals with one or more of the following: transportation, manufacturing, agriculture, resources, trade and urban geography; depending on, and varying with, interests of instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 302 or consent. CE

405-7 (4,3) Advanced Economic Geography II. Content drawn from same broad range of topics as 404. To be alternated with 404 to enable student to specialize further in economic geography. Prerequisite: 302 or consent. CE

406-7 (4,3) Advanced Cultural Geography I. Deals with one or more of the following: population, settlement, ethnic characteristics, political factors; depending

on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 306. CE

407-7 (4,3) Advanced Cultural Geography II. Content drawn from same broad range of topics as 406. To be alternated with 406 to enable student to specialize further in cultural geography. Prerequisite: 302 or consent. CE

410-8 (4,4) Advanced Geographic Techniques. Geographic applications of cartographic and quantitative research techniques. Prerequisite: 310 or consent of instructor. CE

416-8 (4,4) Cartography (C); 416-6 (3,3) Advanced Cartography (E). Instruction and practice in the techniques of map-making and problems in map reproduction. Laboratory. Prerequisite: 310. CE

417-3 Air Photo Interpretation. Techniques in the use of air photos as source material for research in physical and social sciences. Prerequisite: 310. CE

424-4 Regional Problems in Conservation. The distribution, use, and interrelationship of the resources of the U.S. and the conservation techniques applied to them. E
440-2 to 6 Reading for Majors. Supervised readings in selected subjects. Prerequisite: advanced standing. C

450-3 to 15 Travel Study Course. Enrichment through travel, supervised study, and readings on areas visited. E

461-7 (4,3) Advanced Regional Geography: Anglo-America. Deals geographically with present-day United States and Canada. (a) A general survey of the area, open to non-majors. (b) Investigates specific topics in depth, for majors. CE

462-7 (4,3) Advanced Regional Geography: Europe. See 461. CE

463-7 (4,3) Advanced Regional Geography: Mediterranean Lands and Southwestern Asia. See 461. CE

464-7 (4,3) Advanced Regional Geography: Soviet World. See 461. CE

465-7 (4,3) Advanced Regional Geography: Sub-Saharan Africa. See 461. CE

466-7 (4,3) Advanced Regional Geography: Eastern and Southern Asia. See 461. CE

467-7 (4,3) Advanced Regional Geography: Latin America. See 461. CE

468-7 (4,3) Advanced Regional Geography: Oceania. See 461. CE

470-12 (4,4,4) Urban Planning (C). (Same as Government 470.) The basic problems of planning in the urban community. Includes the administrative and physical principles involved in the planning of urban land use. Emphasis is upon research technics, design principles, and governmental instrumentalities in the planning process. Prerequisite: consent of instructor. **470-18 to 22 (4,4,4,2,4 to 8) Urban Planning (E).** (Same as Government 470.) (a) Planning concepts and methods, (b) planning administration and the planning function in public process, (c) field problems, (d) urban planning seminar: Planning in a Free Society, (e) planning and public administration internship. Parts *c* and *d* may be taken concurrently. CE

471-7 (4,4) Regional Planning (C). Examination of the viewpoint, methods, and techniques of regional planning. Prerequisite: consent of instructor. **471-3 to 6 Regional Planning (E).** Area and regional development, theory, and practices. CE

475-4 to 8 Methods of Field Geography. Application of geographic field techniques. E

480-4 Workshop in the Teaching of Geography. Gives the geographic approach to man in space. Skills, techniques in the use of maps, globes, pictures, statistics and graphics, and reading the landscape and literature will be acquired. C

490-3 (1,1,1) Tutorial in Geography (C); 490-6 (2,2,2) Tutorial in Geography (E). Individual and small group conferences with staff members to examine geographic concepts. CE

500-4 Geographic Techniques I. Emphasizes field and quantitative techniques used in geography. CE

501-4 Geographic Techniques II. Emphasizes the conceptual framework of geography, library and bibliographic techniques, and geographic writing. CE

511-4 Philosophy of Geography. The nature of geography. Current trends in the

field, present-day geographers, and schools of thought. Geography's place among the disciplines. CE

514-2 Teaching of College Geography. C

515-4 to 6 Field Course. Designed to give actual experience in the field. Under guidance of staff members students will gather data and work toward the solution of selected field problems in one particular region of the world. This course will not be offered on campus, but will be in a field camp location suited to the study of selected problems. Prerequisite: master's degree or 500 and 501. C

520-2 to 8 Seminar in Physical Geography. C

521-2 to 8 Seminar in Economic Geography. CE

522-2 to 12 Seminar in Regional Geography. CE

523-4 Seminar in Cartography. CE

524-2 to 8 Seminar in Cultural Geography. CE

527-2 to 8 Seminar in Urban and Regional Planning. C

530-2 to 10 Independent Studies in Geography. CE

540a-2 to 12 Research in Physical Geography. C

540b-2 to 12 Research in Economic Geography. C

540c-2 to 12 Research in Regional Geography. C

540d-2 to 12 Research in Cultural Geography. C

599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. CE

GEOLOGY

405-3 Geologic Interpretation of Maps and Air Photos. Interpretation and use of air photos in geologic mapping; interpretation and construction of geologic maps, such as areal, structure, isopach, paleogeologic. Laboratory. Prerequisite: 221, 302, 431. C

410-4 Stratigraphy and Sedimentation. The characteristic features of sedimentary rocks and their processes of origin; the classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory. Prerequisite: 220, 221. C

414-5 Paleobotany. (See Botany 414.) C

415-4 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Laboratory. Prerequisites: 310, Physics 208. C

416-4 X-Ray Crystallography. Introduction to the study, measurement, and identification of unknown crystalline materials by X-ray diffraction techniques (especially the Debye-Scherrer methods). Upon request, non-geology majors may work with unknowns from their own fields of study. Prerequisites: 310, Mathematics 150. C

420-9 (3,3,3) Geology of Petroleum. The geological occurrence of petroleum, including origin, migration, and accumulation; a survey of exploration methods and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum. Laboratory. Prerequisites: 221, 302. C

425-13 (5,4,4) Paleontology. (a) a survey of the important invertebrate phyla and their fossil representatives; (b) the mollusca, arthropoda, brachiopoda, and echinodermata; (c) the protozoa, porifera, coelenterata, bryozoa, and other minor groups. Includes classification, evolution, paleoecology, and geographic and stratigraphic distribution. Laboratory. Prerequisites: 221, Biology 201. C

430-4 Physiographic Provinces of North America. Gives the student an intelligent appreciation of the evolution of land forms in the physiographic provinces of North America and explains the surface features in a landscape. Prerequisite: 220. C

431-4 Geomorphology. A study of land forms, relating topographic features to the underlying rocks and structure and to processes of erosion, deposition, and earth movements. Prerequisite: 220. C

440-1 to 4 Independent Study. Prerequisites: 220, 221, advanced standing. C

450-9 Field Geology. A field mapping course including problems in stratigraphy, structure, paleontology, physiography, and economic geology. Requires a written geologic report. Consult the department for dates, cost, and equipment. Students will live at the Little Grassy Lake campus. Prerequisite: 302. C

450B-3 Advanced Field Geology.

C

510-9 (3,3,3) Stratigraphy. (Paleozoic, Mesozoic, Cenozoic.) Character, chronologic sequence, correlation, time relations, facies, analysis and comparison of rock and bio-stratigraphic units of selected regions throughout the world with emphasis on North America. Laboratory problems involving stratigraphic interpretation from maps, construction of stratigraphic sections, facies maps, and faunal analysis. Field trip and written report required. 2 lectures, 1 laboratory. Prerequisites: 302, 425, 426. C

515-12 (4,4,4) Mineral Deposits. (Principles, Metallics, Non-metallics.) Principles of mineral deposition and genesis, and the origins and geologic settings of the important mineral deposits of the world. Laboratory. Prerequisites: 302, 310. C

520-12 (4,4,4) Advanced Petrology. (a) Igneous Petrology. Physical chemistry, petrographic classification, and genetic relationships of the igneous rocks. (b) Metamorphic Petrology. Physical chemistry, petrographic classification, and genetic relationships of the metamorphic rocks. (c) Sedimentary Petrology. Petrographic classification and origin of sedimentary rocks. Prerequisites: 310, 415, or equivalent. C

528-3 Introduction to Micropaleontology. The study of Foraminifera and Ostracoda is emphasized, but a survey of microscopic fossil organisms and skeletal elements of megafossils is included. Laboratory work in techniques of collection and preparation and methods of study of microfossils. Prerequisite: 426. C

540-1 to 9 Advanced Studies. C

541-1 to 9 Research. C

599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

GOVERNMENT

406-4 The American Chief Executive: President and Governor. A study of the origin and background of the presidency and the governorship, qualifications, nomination and election, succession and removal, the organization of the executive branch, and the powers and functions of the president and governor. Prerequisites: 231, 232 (C); 210 or equivalent (E). CE

410-3 Labor and Politics. A political history of the American labor movement from its early century origins to the present. Attention given to the political philosophy and practice of labor unions. Prerequisite: 231. C

415-3 Political Behavior. An analysis of the nature of public opinion and methods of influencing political behavior. Major attention given to studying the basic psychological attitudes and behavior. Prerequisite: 231 (C); 210 or equivalent (E). CE

420-3 Pressure Groups and Politics. An analysis of interest groups and their techniques of political propaganda. Prerequisite: 231 (C); 210 or equivalent (E). CE

430-3 Government and National Security. A study of the organization of government for national security; the historical and current developments in civil-military relations; the legal status of over-seas military aid programs; international defense programs; and the problem of disarmament. Prerequisite: 231 or consent of instructor. C

432-3 Government and Natural Resources. A study of the administrative and policy problems in the development of multiple purpose conservation programs by the national government. Prerequisite: 231 or consent of instructor. C

434-3 Government and Agriculture. An historical and contemporary survey of the role of agriculture in politics, the major and minor farm parties and pressure groups, the elements of the current "farm problem," and the influence of agriculture in public agencies and the formation of public policy. Prerequisite: 231. C

435-4 Government and Business. An historical study, with contemporary emphasis upon relations between government and economic institutions. Prerequisite: 231 or consent of instructor (C); 210 or equivalent (E). CE

436-3 Government and Labor. (See Economics 436.) C

438-4 Social Welfare Legislation. The Social Security Act and other legislation of major significance for the welfare and maintenance of the family, the handicapped, children, and other special groups. Their relationship to the legal structure of federal,

- state, county, township, and municipal welfare facilities and institutions with indications of economic and social consequences. Prerequisite: consent of instructor. C
- 440-4 Public Personnel Administration.** An analysis of some of the central problems encountered by the government executive in recruiting, maintaining, and developing personnel, such as political neutrality, leadership and motivation, career development, security regulations, and the role of personnel in policy planning and execution. Prerequisite: 210 or equivalent (Edwardsville), 360 (Carbondale). CE
- 441-4 Philosophy of Government.** (See Philosophy 441.) C
- 451-3 International Politics of Europe.** E
- 452-4 Governments and Politics of Sub-Sahara Africa.** A study of the governments and politics of the former and present British and French territories: Ghana, Nigeria, Kenya, Guinea, Congo, Senegal, etc. Prerequisite: GSB 390 or consent of instructor. C
- 453-12 (4,4,4) Soviet Russia and the Communist States of Eastern Europe (C);**
453-12 (4,4,4) The Government and Politics of the Soviet Union (E). An intensive study and research exercise in communist government and politics. Prerequisite: GSB 390 or consent of instructor. CE
- 454-8 Development of German Democracy.** Offered co-operatively by Southern Illinois University and the University of Hamburg. Involves a summer's residence in Hamburg, Germany, and study under professors of the two co-operating universities. Prerequisite: consent of the American professor. C
- 455-4 Major Governments of Western and Central Europe.** A comparative study of the political systems of the major countries of Western and central Europe. Prerequisite: GSB 390 or consent of instructor. CE
- 456-4 Great Britain and the British Empire.** A survey of the governmental institutions and practices within the British Empire, with particular attention to the political systems of Australia, Canada, and South Africa. (The governments of India and Pakistan are treated in 458.) Prerequisite: GSB 390 or consent of instructor. CE
- 457-8 (4,4) Government and Politics in the Near and Middle East.** Iran, Iraq, Syria, Lebanon, Egypt, Jordan, Saudi Arabia, etc. Prerequisite: GSB 390 or consent of instructor (C); 210 or equivalent (E). CE
- 458-12 (4,4,4) Government and Politics of Asia.** (a) Burma, Thailand, Mayala, Indochina, Indonesia, Philippines. (b) China, Japan, Korea, Formosa. (c) India, Pakistan, Ceylon. Prerequisite: GSB 390 or consent of instructor. CE
- 461-4 Organizational Theory and Public Administration.** Analysis of various theoretical approaches to public administration with emphasis on recent American literature in this field. Prerequisite: 360 or consent of instructor (C); 360 or concurrent (E). CE
- 462-3 Administrative Organization.** A survey of the reorganization movement as a whole in the United States with emphasis on recent national, state, and local developments. Prerequisite: 360 or consent of instructor. C
- 463-3 Government, Social, and Economic Policy.** Exploration of contemporary agencies of policy determination within the national government; attention to methods and devices utilized to effectuate national social and economic policy within the federal system; appraisal of historical developments, trends, and results as they affect American governmental, constitutional, and political philosophy, public administration, and the general welfare. Prerequisite: GSB 211c or consent of instructor. C
- 464-3 Regulatory Administration.** A study of the work of the major regulatory commissions of the national government. Prerequisite: 360 or consent of instructor. C
- 465-3 Local Government and Public Administration.** Problems and issues at local governmental level. Emphasizes administrative approaches, special problems in inter-governmental relationships, and the developing tasks related to urban expansion. Prerequisite: 360. E
- 466-3 State Government and Administration.** Leading problems of government and administration of American states. Prerequisite: 232. C
- 467-4 Municipal Government and Administration.** Development and functioning of city government in the U.S. Prerequisite: 232. C

- 468-3 County Government in the United States.** An examination of the traditional rural county and township, the growing number of metropolitan counties, and the associated growth of special districts in the U.S. Prerequisite: 232. C
- 469-3 Administration of State and Local Finance.** An examination of the administrative problems connected with local and state revenues and expenditures in the U.S. Prerequisite: 232. C
- 470 Urban Planning.** (See Geography 470.) CE
- 471-4 The Organization and Administration of American Foreign Policy.** An advanced course dealing with the organizational and administrative aspects of American foreign policy. Prerequisite: 243 or 371. C
- 472-4 International Organization.** Development and organization of international governmental and administrative systems, with emphasis on the United Nations. Prerequisite: GSB 303. C
- 473-3 Metropolitan Studies and Research.** Examination of the reorganization movement related to improvement and restructuring of government in metropolitan areas. Review and evaluation of special problems in research methodology. Prerequisite: 360 or 465 or consent of instructor. E
- 475-8 (4,4) International Law.** Rules and practices governing the nations in their relations in peace and war. Prerequisite: GSB 303 C
- 478-4 International Politics.** A study of the interplay of political forces in the international community. Particular emphasis will be placed on war-time diplomacy, peace treaties, the alignments and conflicts of power in the post-war period. Prerequisite: GSB 303 or consent of instructor. C
- 480-4 The Pacific and the Far East.** Political and strategic problems in this area. Prerequisite: GSB 303 or History 370. C
- 484-8 (4,4) History of Political Theories.** (a) Outstanding political theories of the ancient and medieval periods, including theories of Aristotle, Plato, Cicero, St. Augustine, and Thomas Aquinas. (b) Important political theories from the Renaissance to the end of the 18th century, including the theories of Machiavelli, Hobbes, Rousseau, Locke, and Burke. Prerequisite: 6 hours of government. CE
- 485-4 Renaissance and Rationalist Political Theories.** C
- 487-6 (3,3) American Political Ideas.** An historical study of the political ideas of leading American statesmen and publicists, and their resulting influence upon our governmental system. Prerequisite: 305 or GSB 385. CE
- 488-12 (4,4,4) Recent Political Theory.** (a) The outstanding Anglo-American liberal political theorists from John Stuart Mill to the present. (b) The outstanding "scientific" political theorists from Karl Marx to the present. (c) The outstanding idealistic and nationalistic political theorists from Hegel to the present. Prerequisite: GSB 385 or 390. C
- 495-8 (4,4) Constitutional Law.** (a) Constitutional law of the United States with emphasis upon cases dealing with the framework of our federal system. (b) American liberties. Prerequisite: 231. CE
- 497-4 Administrative Law.** Law as it affects public officials in carrying out the rights, duties, and necessary functions of the public office. Prerequisite: 360. C
- 498-4 Jurisprudence.** (Theories of Law.) Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights. Prerequisite: 231. C
- 499-4 Scope and Method of Government.** Practical training in research and writing techniques in the field of government. Bibliographical materials, footnotes, use of law library facilities, and government documents. Required of all beginning graduate students. C
- 501-525 Seminars.** Preparation and presentation, for criticism, of assigned research papers. Hours of credit as announced. C
- 501-2 to 9 Seminar in Contemporary Legislation.** Prerequisite: 340 or consent of instructor. C
- 502-2 to 9 Seminar in Governmental Problems.** Prerequisite: consent of instructor. C

- 503-2 to 9 Seminar in Pressure Groups. Prerequisite: 420 or consent of instructor. C
- 505-2 to 9 Seminar in Political Parties. Prerequisites: 380, 420, or consent of instructor. CE
- 508-2 to 9 Seminar in International Relations. Prerequisites: 370, 472 or 475, or consent of instructor. C
- 509-2 to 9 Seminar in International Organization. Prerequisite: 472 or consent of instructor. C
- 510-2 to 9 Seminar in State Government. Prerequisite: 466 or consent of instructor. C
- 511-2 to 9 Seminar in Local Government. Prerequisite: 467 or consent of instructor. C
- 512-2 to 9 Seminar in Public Administration. Prerequisite: 360 or consent of instructor. CE
- 513-2 to 9 Seminar in Constitutional Law. Prerequisite: 395 or consent of instructor. C
- 515-2 to 9 Seminar in Comparative Constitutions. C
- 516-2 to 9 Seminar in Municipal Administration. Prerequisite: 467 or consent of instructor. C
- 517-2 to 9 Seminar in Problems in Political Theory. Prerequisite: 360 or consent of instructor. C
- 520-2 to 9 Seminar in American Foreign Policy. Prerequisite: 371 or consent of instructor. C
- 521-1 to 12 Readings. Supervised readings in selected subjects. Not more than 6 hours may apply toward the master's degree. Prerequisite: consent of instructor. C
- 525-2 to 9 Seminar in International Law. Prerequisite: 475 or consent of instructor. C
- 526-2 to 9 Seminar in County Government. Prerequisite: 465 or consent of instructor. C
- 530-4 to 12 Internship in Public Affairs. Field work in the office of a governmental agency; city, county, state, national, or international. Under certain circumstances it might be in the office of a political party organization or in that of some organized pressure group. The type of internship and the place and organization in which it is taken must be mutually satisfactory to the student and the department. A paper in which the student correlates his academic knowledge with his practical experience is required. Prerequisite: consent of department. CE
- 595-2 to 12 Individual Research. Selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Prerequisite: 499 or consent of instructor. C
- 598-1 Teaching Government. C
- 599-2 to 9 Thesis. Prerequisite: 499 or consent of instructor. Minimum of 5 hours to be counted toward a degree. C
- 600-1 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

GUIDANCE

- 412-4 Mental Hygiene. A survey of principles concerning factors and conditions in personal life that tend to facilitate or deter mental health. Mental health viewed as living creatively in an atmosphere of satisfactory inter-personal relations. Prerequisite: 305. CE
- 420-4 Educational Statistics. The statistics needed by teachers for classroom use, the reading of educational literature, and informal educational research. Includes methods of organizing and presenting data, describing group performance, describing individual performance, model distributions, measure of relationship, measures of reliability, and tests of significance. Prerequisite: 305. E
- 422-12 (4,4,4) Educational Measurement and Statistics. (a) Study of the philos-

ophy and techniques of measurement. Special attention to the construction and use of teacher-made tests. (b) The statistics needed by teachers for classroom use, the reading of educational literature, and informal educational research. (c) Study of standardized tests and other measuring devices to reveal individual and group characteristics. Emphasizes application and interpretation for counseling, education, and research purposes. Must be taken in a,b,c sequence. Prerequisite: 305. C

422-4 Educational Measurements I. Study of the philosophy and techniques of measurement. Special attention to the construction and use of teacher-made tests. Prerequisite: 305. E

426-4 Individual Inventory. Principles and procedures for studying individual pupils and their problems, for guidance purposes. Emphasis on interview, observation, ratings, case study, cumulative record, etc. Prerequisites: 422b, 442. CE

442-4 Basic Principles of Guidance. Introductory course on student personnel services. Survey of philosophy, principles, and organization of guidance services. Prerequisite: 305. C

475-4 Implementation of Guidance Principles in the Public Schools. C

481-1 to 6 Seminar. Conducted by staff members and/or distinguished guest lecturers on pertinent topics. Prerequisite: 305. C

483-6 Community Programs for the Prevention of Juvenile Delinquency. Analysis of delinquency prevention in community programs administered by the public schools, social welfare, governmental agencies. A study of the various categories of juvenile delinquency is applied to a critique of existing programs and to the development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: consent of instructor. E

485-4 to 9 Workshop in Educational Utilization of Community Resources. CE

501a-2 to 8 Special Research Problems. For majors in Guidance. Formulating, investigating, and reporting on a problem in the area of guidance. Prerequisite: Advanced standing and consent of department. E

501-2 to 6 Special Research Problems. C

502-4 Measurement and Evaluation of Products and Procedures. C

503-4 Tests and Measurements in Business Education. C

511-4 Educational Implications of Learning Theories. Survey of the major theories of learning. Emphasizes the implications of these theories for classroom practice. Prerequisite: advanced standing. CE

515-4 Psychological Aspects of Education. Designed to survey the applications of psychology to educational settings. Prerequisite: advanced standing. CE

520-8 (4,4) Educational Statistics and Experimental Design. (a) Statistical methods needed for educational research. Includes reliability of statistics, tests of significance, nonparametrics, correlation analysis, and test selection. Prerequisite: 422b. (b) Systems of organizing and analyzing data so that maximum information can be obtained. Includes analysis of variance, factorial design, square designs, mixed designs, tests of homogeneity, analysis of covariance, etc. Must be taken in a,b sequence. Prerequisite: 422b. C

520-4 Advanced Educational Statistics. E

522-4 Educational Measurements II. Study of standardized tests and other measuring devices to reveal individual and group characteristics. Emphasizes application and interpretation for counseling, education, and research purposes. Prerequisite: 420, 422. E

525-4 School Behavior Problems and Their Prevention. A survey of the approaches to the study of personality-development and socialization of the school child. Methods used in the correction of behavior problems are considered. Prerequisite: consent of department. CE

526-4 Techniques in Individual Guidance. Each student employs psychometric procedures, makes observations, and holds interviews with a pupil, his parents, teachers, and others. The student will work with one pupil only throughout the quarter. Prerequisite: 525. CE

528-4 Advanced Guidance of the Individual. A continuation of 526. Techniques and the methods of treatment which would apply to a particular case. Problems for consideration: educational difficulties, physical disorders, and the ways in which these are related to behavior of school children. Prerequisite: 526. CE

535-4 Introduction to Individual Measurement. Survey of theories and practices in the individual assessment of human behavioral characteristics, to develop understanding and appreciation of these concepts for use in the counseling relationship. Prerequisite: 522. E

536-8 (4,4) Individual Measurement and Appraisal. (a) Children: Designed to teach the administration of the Stanford-Binet and the Wechsler Intelligence Scale for Children. Class periods are devoted to discussions concerning theories of intelligence and problems in the administration of intelligence tests. (b) Adolescents: Designed to teach the administration of the Wechsler Intelligence Scale for Adults. Class periods are devoted to discussions concerning theories of intelligence and problems in the administration and intelligence tests. Prerequisite: 422c. C

536-8 (4,4) Appraisal of Intelligence. (a) Elementary school level, (b) adolescents. Prerequisite: 535. E

537-12 (4,4,4) Counseling Theory and Practice. (a) Systematic study of the assumptions and fundamental practices of major approaches to counseling. Observation and practice utilized to supplement didactic discussion. Prerequisite: consent of chairman. (b) Systematic study of major theories of counseling, as they apply to school situations. Supervised experience in role-playing utilizing these approaches to counseling. Prerequisite: 537a. (c) Continuation of 537b with supervised experience in counseling to illustrate relationship of theory and practice. Prerequisite: 537b. C

537-4 Counseling Theory and Practice I. Systematic study of the major approaches to counseling. Observation and practice utilized to supplement didactic discussion. Prerequisite: 412 and 542. E

538-4 Counseling Theory and Practice II. Systematic study of major theories of counseling, as they apply to school situations. Supervised experience in role-playing utilizing these approaches to counseling. Prerequisite: 537. E

541-4 Occupational Information and Guidance. Designed for school counselors, industrial supervisors, and teachers to give an orientation to and experience with occupational information and vocational adjustment. Prerequisite: 442. CE

542-4 Basic Principles of Guidance. Introductory course on student personnel services. Survey of philosophy, principles, and organization of guidance services. Prerequisite: 305. E

543-4 Guidance Through Groups. Study of the methods, techniques and materials for the organization and utilization of groups for guidance purposes. Prerequisite: 442. CE

545-2 to 4 Seminar in Guidance. (a) Problems in guidance. A seminar-laboratory course to discuss current problems in guidance as met by guidance workers in the field. Prerequisite: advanced standing. (b) Learning and Communications. Students examine theory and research related to communication by reviewing literature, designing studies, and conducting research projects. Prerequisite: consent of chairman. (c) Educational Diagnosis. Use of diagnostic tests in school settings. Includes theory, development, administration, and interpretation of selected diagnostic tools. Prerequisite: 422c. (d) Test Development. Applies measurement principles to the development of tests. Primary emphasis upon achievement test construction and research involving test data. Prerequisite: 422c. (e) Test Analysis. Extends and applies the research implications from 545d. Prerequisite: 545d. (f) Pupil Adjustment. Deals with various concepts of adjustment and their behavioral implications, and the process of adjustment at different life stages. The numerous questions, problems, and controversies that exist in the area of adjustment will be emphasized. Prerequisite: 525. (g) Learning and Instruction. Surveys research in classroom learning and implications for the classroom teacher. Included are practice and review, transfer of training, retention and forgetting, and motivation. Prerequisite: 511. (h) Individual Differences. Extends and applies research implications from 545g. Students will participate in application of findings to classroom situations. Prerequisite: 545g. (j) Or-

ganization and Administration. Presentation of principles, procedures, and plans necessary for initiating, developing, and appraising a school guidance program. Prerequisite: 537a. (k) Rehabilitation. CE

562-8 (4,4) Human Development in Education. Theories and research evidence regarding child development and behavior are investigated. These considerations focus upon implications for research and socialization practices. (a) Childhood. Prerequisite: advanced standing. (b) Adolescence. Must be taken in a,b sequence. CE

565-4 Psychology of Elementary School Subjects. C

566-4 Psychology of Secondary School Subjects. C

573-2 Selection, Placement, and Follow-up. Survey of current techniques and criteria used in selection, placement, and follow-up of both handicapped and non-handicapped employees. Prerequisite: advanced standing. C

575a-1 to 12 Practicum in Counseling. Practical experience in counseling with a representative sample of the population. May include role playing, psychodrama, and listening to recordings of counseling sessions individually or in groups. Prerequisite: 537a. CE

575b-1 to 12 Practicum in Elementary Guidance. Supervised experience in interviewing and counseling, case study, and educational diagnosis with the elementary school child. Prerequisite: 537a. CE

575c-1 to 12 Practicum in Secondary Guidance. Supervised experience in guidance functions. Includes counseling with secondary school pupils, conducting parent interviews, consulting with teachers, and the collection and dissemination of information. Prerequisite: 537a. C

575d-1 to 12 Practicum in Rehabilitation Practices. Assignment to an agency or institute in the region for supervised training and organizational and procedural aspects of providing rehabilitation and welfare services to recipients. C

575e-1 to 12 Practicum in College Student Personnel Work. Laboratory and research course for advanced majors. Students to assist with testing programs, keeping records, and counseling students. Research projects to accompany practical experience. Minimum of 12 hours per week on the job. Prerequisite: 537a. C

576-4 Practicum in School Personnel Work. Laboratory research course for advanced majors. Students to assist with testing programs, keeping records, counseling students. Research projects to accompany practical experience. Minimum of 12 hours per week "on the job." Prerequisite: advanced standing and consent of instructor. E

581a-1 to 12 Internship in Counseling. C

581b-1 to 12 Internship in Elementary Guidance. C

581c-1 to 12 Internship in Secondary Guidance. C

581d-1 to 12 Internship in Rehabilitation Guidance. C

590-4 Seminar in Behavioral Foundations. A two-quarter experience required of all students beginning advanced graduate study. Students examine empirical modes of inquiry and empirical formulations of learning behavior. Topics explored include the classroom as a social system, the learner, learning (transfer), models and data language. Prerequisite: advanced standing. C

596-5 to 9 Independent Investigation. C

599-2 to 9 Thesis. C

600-1 to 48 Dissertation. C

HEALTH EDUCATION

400-4 Health Appraisal of School Children. The role of the teacher in the health appraisal of the school child, including school health examinations, use of health records, and emphasis on training for recognition of health deviations from normal common among school children. Not open to students who have had 450. CE

405-3 Methods and Materials in Social Hygiene. Designed to prepare the prospective teacher to instruct in various phases of family life education. C

413S-4 Safe and Healthful Living Outdoors. This course has to do with safe and healthful living outdoors. Areas to be included are foods, sanitation, survival, plants

and animals, natural hazards, emergency care, water, riflery, and others. Prerequisites: 334S, and at least 10 hours of biological sciences. C

415S-3 to 4 Workshop in Driver Education and Traffic Safety. Summer course designed for pre-service and in-service teachers of driver education and traffic safety. Individual and group problems will be treated. Lectures by safety authorities, demonstrations, field trips, audio-visual materials, and individually supervised research in special problem areas. Prerequisite: 302 or equivalent. CE

443S-4 Methods and Materials in Driver Education. An advanced course in driver education which includes a study of existing courses of study, review of research, course-of-study planning, visitation and reporting, panel discussions, accident statistics, conducting the secondary school program, testing and demonstration in the car. Prerequisite: 302. C

450-4 Health Education in the Elementary School. Responsibilities of schools to instruct their students in basic fundamentals of how to live healthfully. Principles, methods, programs, and materials for the elementary teacher. The integration of health with other subjects, health observation of children, abnormalities, screening tests, and related materials. Not open to students who have had 400. C

460-4 Methods and Materials in Secondary School Health Education. Shows the prospective teacher the fundamental processes involved in the teaching of health education at the secondary level. CE

461-4 Workshop in Health Education. Summer course for in-service teachers, administrators, advanced students, nurses, social workers, and others interested in public health aspects of school and community living. Individual problems of classroom health treated as units in such fields as speech defects and their detection and correction, communicable disease control, nutrition, social and mental hygiene. Lectures, demonstrations, films, field trips, and individually supervised research in special problems. Prerequisite: GSE 201 or equivalent. CE

462-4 Health Education Workshop. A continuation of 461 with emphasis on total school health teaching objectives. C

463-4 Health Education Workshop. A continuation of 462 with emphasis on evaluation of total school health teaching program. C

464-4 Workshop in Alcohol Education. Summer course for in-service teachers, administrators, and others interested in the development and improvement of alcohol education programs at the elementary and secondary school levels. Includes approaches to understanding physiology of alcohol, cultural differences and patterns relative to development of habits and attitudes toward drinking, nature and extent of alcohol problems, teenage drinking and current theories and approaches to alcoholism. Emphasis on the analysis and development of content, methods, materials, teacher preparation, and special needs and problems of individual communities. Demonstrations, lectures, films, field trips, and individual research in special areas. C

471-4 Organization and Administration of School Health. Appraisal of over-all school organization for health education, including health service and personnel, health and safety instruction, school environment, school health examination, local, state, and federal resources for health, health councils, and interdepartmental relationships. CE

475S-4 Traffic Law Enforcement and Planning. To acquaint safety and driver education teachers with the purposes of traffic law enforcement and engineering, and the methods used to fulfill these purposes. Emphasis on ways of improving existing services and co-ordinating the efforts of many official and nonofficial agencies concerned with the traffic problem. Prerequisite: 443S or consent of instructor. C

480S-4 Workshop in Safety Education. Summer course for in-service teachers, nurses, administrators, advanced students, and others interested in safety education as it applies to the public school and the community. Individual problems, lectures, demonstrations, films, field trips and individual group study in special areas of interest. Prerequisite: 313S or 323S or consent of instructor. CE

481S-4 Safety Education Workshop. A continuation of 480S with emphasis on methods and evaluation of total school safety education program. Prerequisite: 313S, or 323S, or 480S, or consent of instructor. C

488-3 Health Education Aspects of Environmental Sanitation. Application of principles of learning to man's contacts with his environment: water, food, air, radiation, housing, and refuse. Emphasis upon both individual and community aspects of environmental health. Prerequisites: GSE 201, 205, or equivalent. C

489-4 Introduction to Vital Statistics. An introduction to biostatistics; examination of theories of population growth; understandings of collection, organization, summarization, presentation, evaluation, and interpretation of data relative to biologic happenings. Prerequisite: Mathematics 220 or equivalent. C

490-2 to 8 Field Work in School and Community Health. Field training, observation, and participation in current public and school health programs. Area schools and public health agencies will be utilized to provide practical experience for the health education student. Restricted to majors. C

500-4 Community Organization for Health Education. Review of the philosophies of community organization for health; techniques of group work, current research in community organization, and examination of programs of community health agencies. C

510-4 Construction of the Curriculum in Health Education. Review of health instruction programs in elementary and secondary schools, consideration of health needs and interests and their relationship to the curriculum, evaluation of health texts, and evaluation of current research. C

511-5 Practicum in Health Education Workshop. Designed to give graduate and post-graduate students experiences in organizing, planning, and operating in-service training programs through workshop methods. C

515-4 Review of Current Literature in Health Education, Public Health, and Safety Education. A survey and analysis of the newer publications in the related fields of health education, public health, and safety education. C

520-4 to 6 Special Projects. For students who may wish to conduct more detailed research and study on advanced problems in the fields of public health, safety education, and health education. C

525S-4 Organization, Administration, and Supervision of Safety Education. Designed to give the student basic principles of organization, administration, and supervision in safety education. Problems, policies, practices, and methods involved in the organization, and administration of a safety education program. C

526-4 Evaluation in Health Education. Survey and analyses of health testing and evaluations, procedure including surveys, inventories, knowledge, behavior and attitude tests, check lists, and questionnaires, their uses and limitations. Evaluation of total school health program is emphasized. Prerequisite: consent of chairman. C

530S-4 Problems and Research in Accident Prevention. Principles of accident prevention, causes of accidents, problems of behavior, and study of current research related to safe behavior in the school, home, traffic, and transportation. Prerequisites: 443S, 525S, or consent of instructor. C

533-12 (4,4,4) Human Conservation. (a) An analysis of community health problem trends and changes including aging; chronic and degenerative diseases; mental illnesses; traumatic illnesses, injuries and defects; radiological hazards; communicable diseases; and maternal and child health problems. An epidemiological approach to the cause, nature, extent, and trends in erosion and wastage of human resources. (b) An analysis of community structures in relation to positive health services, education, and healthful living in respect to community health problems and health requirements. A study of trends in programming to meet minimum health requirements and to care for or ameliorate existing health problems and hazards on a community-wide basis. (c) An analysis of the unmet health needs or requirements for optimum conservation of human resources in the community including a study of pilot and experimental programs and research in community efforts to meet health needs and solve existing health problems. An evaluative approach to existing health programming and research including an analysis of further needed experimentation and research and possible sources for leadership and funds for promoting community health research, programmings, and planning. Must be taken in a,b,c sequence. Prerequisite: consent of instructor. C

536-4 Professional Preparation in Health Education. National, state, local factors influencing teacher preparation in health education, including accreditation of teacher education programs, certification of health education teachers. Undergraduate and graduate curricula developed and analyzed. C

590-4 to 12 Field Internship. Full quarter of field work with an approved department of public health or voluntary health agency under the supervision of the agency officer in charge and the supervisor from the Department of Health Education. C

595-4 to 6 Thesis. C

597-1, 598-1, 599-1 Seminar in Health Education. Seminar for advanced graduate students devoted to discussing individual health projects, presenting research problems and preliminary presentation of dissertation topics. C

600-1 to 48 Dissertation. The dissertation for the Ph.D. degree in the College of Education must meet the minimum requirements of 36 hours. C

HIGHER EDUCATION

401-2 Careers in Higher Education (College Teaching). C

402-2 Careers in Higher Education (College Student Personnel). An exploratory course designed to acquaint the student with the career possibilities and functions of higher education. C

410-4 Higher Education in the United States. An overview of higher education with emphasis on current problems and organizational relationships. C

441-4 Functions and Organization of College Student Personnel. A description and discussion of the functions of college student personnel programs with an emphasis on the organizational relationships of the various functions. C

450-1 Orientation to College Teaching. C

477-2 Principles of College Staff Management. A study of systems and problems of personnel practices. C

511-4 History and Philosophy of Higher Education. A study, using the historical approach, of the development of American philosophy of higher education. C

512-4 Higher Education in the Nations of the World. A comparative study of higher education systems. C

513-4 Policy Making and Control of Higher Education. A case approach to a study of the sources of policy making, the methods of control, and the relationships among various policy making and operating units. C

521 (2 per quarter) Seminar in Higher Education. A series of seminars arranged to meet the needs of specific groups. (a) College Teaching. (b) Student Values. (c) Housing. (e) Staff Personnel. (f) Finance. (g) The Junior College. (m) Sociology of Higher Education. (s) Continuing Education. (v) Academic Administration. (y) The Technical Institute. C

522-1 to 12 Readings in Higher Education. (a) College Teaching. (b) College Student Personnel. (c) College Administration. C

523-1 to 12 Internship in Higher Education. Supervised work experiences in appropriate settings. (a) College Teaching. (b) College Student Personnel. (c) College Administration. C

524-2 to 6 Special Research Problems. (a) College Teaching. (b) College Student Personnel. (c) College Administration. C

546-4 Personnel Work with College Student Groups. A case approach to the understanding of the various aspects and relationships of student cocurricular activities. Emphasis on the role of group activities in the educational life of the student and the college community. C

551-4 Curriculum Design and Development in Higher Education. Examination of methods and resources in designing various college curricula. Emphasis on experimentation in curriculum development. C

565-4 The Junior College. A study of the function of the junior college in American higher education with particular emphasis on relationships to the secondary school and to the community. Course content treats special problems of curriculum, student services, finance, and faculty selection and growth. CE

- 576-4 Administrative Practices in Higher Education.** A study of administrative behavior with applications to higher education setting. C
- 578-4 Finance of Higher Education.** A description of the economic aspects of higher education. Study of sources and management of college finance including budgeting and control. C
- 599-1 to 9 Thesis.** C
- 600-1 to 48 Dissertation.** Minimum of 36 hours to be earned for the Ph.D. degree. C

HISTORY

- 401-6 (3,3) (C); 401-8 (4,4) (E) History of the South.** (a) The Old South. (b) The New South. An intensive study of the social, economic, political and cultural developments of the South. CE
- 405-3 Civil War and Reconstruction.** Emphasis upon the clash of national and sectional interests; economic, political, and military aspects of the conflict; course and consequence of reconstruction. Prerequisite: GSB 300b, or consent of instructor. CE
- 410-2 to 5 Special Readings in History.** Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand. CE
- 411-9 (3,3,3) Social and Intellectual History of the United States.** (a) 1607-1830. (b) 1830-1900. (c) 1900 to present. The development of American society and a study of various types of economic, social, and political thought that have influenced it. C
- 411-9 (3,3,3) Intellectual History of the United States.** (a) 1607-1789. (b) 1789-1900. (c) 1900 to present. Prerequisite: 201-8. E
- 415-9 (3,3,3) (C); 415-12 (4,4,4) (E) Early Modern Europe.** (a) Renaissance. (b) The Reformation. (c) Age of Absolutism and Enlightenment. Prerequisite: GSB 101b,c. CE
- 417-9 (3,3,3) (C); 417-16 (4,4,4,4) (E) Advanced English History.** (a) The Empire-Commonwealth. (b) Constitutional History. (c) English Culture in the Age of the American Revolution. (d) Tudor England. E
- 420-3 The French Revolution.** A sketch of the passing of feudalism in France, the background and development of the revolutionary movement, and the Napoleonic period. CE
- 425-4 American Colonial History.** Founding of the American colonies and the development of their institutions to 1763. CE
- 428-4 The Age of Jackson.** Origins, background, and development of that phase of American democracy associated with the Jacksonian era. The political, social, and economic history of the years 1815-44 will be considered in detail. Prerequisite: GSB 300a. E
- 430-9 (3,3,3) Late Modern Europe.** (a) Age of Revolution, 1815-1880. (b) 1880-1918. (c) Since 1918. Age of Dictatorships. CE
- 432-12 (4,4,4) Advanced English History.** E
- 435-9 (3,3,3) Advanced American History.** (a) 1865-1912. (b) 1913-1932. (c) 1932 to present. The major problems and trends from the Civil War to the present. Parts may be taken separately. Prerequisites: GSB 300a,b. C
- 435-9 (3,3,3) Advanced American History.** (a) 1865-1900. (b) 1900-1929. (c) 1929 to present. Prerequisite: 201-8. E
- 440-6 (3,3) History of American Diplomacy.** (a) To 1917. (b) 1917 to the present. A study of the important treaty relations of the United States, and a general consideration of American foreign policies. Prerequisites: GSB 300a,b, or consent of instructor. C
- 440-6 (3,3) History of American Diplomacy.** (a) To 1898. (b) Since 1898. Prerequisite: 201-8. E
- 442-9 (3,3,3) History of the West.** (a) Colonial. (b) Trans-Allegheny. (c) Trans-Mississippi. C
- 449-4 Development of Afro-Asian Nationalism.** A study of the rise of national movements, the winning of independence, and the vast array of reconstructional prob-

- lems. Post-Bandung developments and the relation of Afro-Asian nationalism to the Communist world are extensively discussed. C
- 450-4 Europe Since 1914.** Political and cultural developments in 20th century Europe with emphasis on international relations. Prerequisites: GSB 101b,c. E
- 451-3 Historiography.** Development of history as a written subject, including works and philosophy of the various historians in ancient, medieval, and modern periods. CE
- 452-3 Historical Research and Thesis Writing.** The rules of historical research studied and applied to a definite topic. (For history majors only.) CE
- 454-3 Biography in American History.** Outstanding leaders and their contributions to the history of the United States. Attention to historical writers who specialize in biography. Prerequisite: a course in U.S. history. CE
- 455-3 History of Inner-Asian Relations.** Tribes, migrations, wars, and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier. C
- 460-9 (3,3,3) Social and Intellectual History of the Middle Ages.** (a) 500-1000. (b) 1000-1250. (c) 1250-1500. C
- 470-3 Argentina, Brazil, and Chile.** A narrative and comparative study of the independent era of the history of the three leading states of South America. C
- 471-6 (3,3) History of Mexico** (a) 19th century. (b) 20th century. Significant political, economic, diplomatic, social, and cultural aspects of Mexican life from independence to modern Mexican life. C
- 473-3 The Caribbean Area in the 20th Century.** An inquiry into the changing role of the political, economic, strategic, and cultural nature of this Mediterranean of the New World. C
- 481-3 Rome: The Early Empire.** E
- 500-3 to 9 History Seminar.** Research methods applied to the various history fields. CE
- 510-2 to 5 Readings in History.** Registration by special permission only. CE
- 515-3 Current United States History and Problems.** A content and research course dealing with contemporary American affairs. Consists of textbook assignments, outside readings. Prerequisite: proper background and consent of instructor. C
- 516-5 Studies in Contemporary Europe.** A content and research course in European civilization since 1914 which stresses the rise of totalitarianism and the democratic crisis. C
- 517-3 Constitutional History of the United States and Problems.** A content and research course involving origin and development of the American Constitution, from English background, through the convention, to the present. C
- 518-3 England in the Age of the "Glorious Revolution."** An analysis of the ideas and forces that converted the English government into a liberal state with an emphasis on the concepts and principles later applied in the establishment of the American Constitution. C
- 519-4 The Age of Jefferson.** Rise and development of Jeffersonian Democracy, 1790-1824, with emphasis upon social, economic, and political programs of Republicans and Federalists; the clash of mercantile and agrarian interests. CE
- 553-3 New Viewpoints in American History.** New interpretations and recent developments in American history. Prerequisite: GSB 300-6. CE
- 598-3 (1,1,1) Teaching History in College.** Required of all first-year teaching assistants. C
- 599-1 to 9 Thesis.** Minimum of 5 hours to be counted toward a master's degree. C

HOME AND FAMILY

- 407-2 to 8 Workshop.** Aids workers in professions related to home and family. C
- 423-4 Advanced Family Housing.** (Same as Clothing and Textiles 423.) Further appreciation and understanding of aesthetic, economic, psychic, and social factors influencing choice of family housing today. Prerequisite: Clothing and Textiles 323 or consent of instructor. C

424-4 Selection, Use, and Care of Appliances. Materials used in equipment, methods of construction, principles of operation of appliances for cooking, refrigeration, laundering, cleaning; selection, operation, and care of appliances to obtain maximum satisfaction in use. Offered on demand. Prerequisite: 324 or consent of instructor. C

435-4 Work Simplification in Home Management. Basic scientific work simplification principles applied to work done in the home by full-time, employed or physically handicapped homemakers. C

456-4 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory and field experiences. Prerequisite: 237 or Psychology 301 or equivalent. C

466-2 Practicum in Parent-Child Study. Designed to increase student's ability to work with parents and parent groups through an awareness of factors in the parent-child relationship and knowledge of current research and methods in parent education. Integration with infant and child development laboratories and related field experience. Prerequisites: 227, 237 or equivalent. C

471-2 to 6 Field Experience. C

481-2 to 6 Readings. Supervised readings for qualified students. Prerequisite: consent of instructor and chairman. C

500-4 Research Methods. The nature of the scientific method, and basic techniques in home and family research as applied to the collection, analysis and interpretation of data. Prerequisite: Guidance 422b or Mathematics 420, or consent of instructor. C.

540-4 Trends in Consumer Problems. Social, legal, and economic problems that pertain to the consumer. Selection of individual problems for investigation. Prerequisite: 341 or equivalent. C

550-4 Advanced Home Management. Readings, observations, projects, and discussions on selected problems with emphasis on time, money, energy, and family relations. Prerequisites: 331, 332, or equivalent. C

556-4 The Pre-School Child. Growth of the child from birth to six years with emphasis on the various aspects of growth and their interrelationships. C

562-4 Child Development Through Home and School. The normal, healthy development of children as it takes place in the home and is promoted by the curriculum and other school activities. C

566-4 Interpersonal Relationships Within the Family. Factors that promote satisfactions within the immediate family. Prerequisites: 227 or GSB 341, 237, 331. C

571-4 Recent Research. Review of selected research in various phases of home economics in related fields. Sources of research include colleges, universities, and governmental and industrial agencies. Offered on demand. C

572-2 to 8 Special Problems. For students recommended by their chairman and approved by the head of the department and the instructor in charge for independent work or directed study. C

599-5 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-3 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

HOME ECONOMICS EDUCATION

414-4 Home Economics for Elementary Teachers. Units of work in nutrition, school lunches, family and social relationships, textiles, and clothing. C

415-1 Introduction to Graduate Study. Seminar to orient the student to graduate work through relation of courses to goals of program, standards of work, habits of thinking, communication of ideas, uses of professional materials and publications. Required. Students should take at first opportunity. C

481-2 to 6 Readings. Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department. C

500-4 Research Methods. Methods employed in research in home economics education with special study of one according to interest and needs of student. De-

velopment of prospectus. Prerequisites: Guidance 422b, or consent of instructor. C
505-4 Home Economics in Secondary Schools. Consideration of the curriculum for homemaking education in the secondary school. A critical survey of resources. The place of homemaking education in the school and community. C

506-4 Evaluative Procedures in Home Economics. Principles and procedures underlying appraisal and evaluation. Development and critical consideration of instruments for appraising pupil growth and the program of instruction. Emphasis placed on values. C

507-2 to 8 Workshop. Designed to aid home economics teachers, supervisors, leaders in the field with current problems. Resource people are used. Discussions, reports, lectures, and other methods of analyzing and working on solutions to problems. Emphasis for the workshop will be stated in the announcement of the course. C

510-4 Supervision of Home Economics. Nature, function, and techniques of supervision at all levels. Emphasis given to supervision of student teachers. Experience in the field will be provided for qualified teachers. C

510A-1 to 4 Practicum in Supervision. Experience in using a variety of techniques at various levels and areas of supervision both on and off campus. Prerequisite: 510 or Educational Administration and Supervision 456 or consent of instructor. C

515-4 Trends in Home Economics Education. Current trends, problems, needs in the field. Attention given to problems and needs of students. C

516-4 Advanced Methods of Teaching Home Economics. Recent trends in methods based on research and experimental programs; furthering good relations in homemaking classes as means of clarifying and accomplishing goals; teacher's role; techniques useful in furthering good relations within group and in meeting individual needs. Emphasis given to social significance of these procedures. C

517-4 Methods and Materials for Adult Programs in Home Economics. Philosophy of adult education; unit planning, methods, techniques, and resources useful in adult homemaking programs. C

571-4 Recent Research. Review of selected research in various phases of home economics in related fields. Sources of research include colleges universities, and governmental and industrial agencies. Offered on demand. C

572-2 to 8 Special Problems. For students recommended by their chairman and approved by the head of the department and the instructor in charge for independent work or directed study. C

573-1 to 6 Seminar: Research in Home Economics. Presentation of prospectus outlines, research projects, problems for research, progress reports of research by graduate students and faculty. Prerequisite: consent of instructor. C

599-5 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-3 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

INDUSTRIAL EDUCATION

408-3 Teaching Aids in Technological Education. Selection of development, analysis, cataloging, and use of commercial and self-made instructional aids and devices. Prerequisite: consent of instructor. C

419-8 to 16 Student Teaching in Technical Programs. Experience in working with special and post-high school technical training programs in approved centers. The student teacher will follow the program of the supervisors of the major specialization in both regular and extra-class activities. C

430-2 to 8 Special Problems in Industry and Technology. C

435-6 to 12 Manual Arts Internship. Supervised hospital experience featuring various applications of manual arts therapeutical treatments. Prerequisite: consent of co-ordinator. C

450-1 to 12 (1 to 4 per quarter) Advanced Skills in Technical Subjects. Modern industrial practices and techniques in various selected technical fields. For experienced persons seeking an opportunity to develop advanced techniques and to increase understanding in specialized industrial fields. Emphasis on modern industrial

processes, methods, materials, and techniques used in school shops, drafting rooms, and industrial organizations. Prerequisite: basic training in area selected for study. Limited to certified teachers. C

465-8 (4,4) Industrial Safety. (See Industrial Technology 465.) C

480-3 Problems of Junior High School Industrial Arts. Ways and means of correlating industrial arts with other curriculum areas, selecting content, and solving problems pertinent to industrial arts at the junior high school level. Prerequisite: 12 hours in technical subjects. C

485-3 Principles and Philosophy of Industrial, Vocational, and Technical Education. An understanding of the nature and purpose of practical arts, vocational and technical education, their relationships and differences, and the place of each in preparing people for the world of work. No prerequisite. C

487-3 Layout and Planning of Technical Facilities. Principles and practices underlying the planning and designing of shops and laboratories in vocational, industrial, and technical education. Prerequisite: 12 hours in technical subjects. C

491-6 (3,3) Principles of Industrial Teaching. (a) Problems and special methods in teaching industrial arts. (b) Emphasis on methods of teaching trade subjects. May be taken in either sequence. Prerequisite: one-half of major must be completed. C

494-3 Organization and Administration of Industrial Education. Principles and policies governing the administration of industrial education programs in elementary, junior, senior high schools; relation of federal and state supervision of industrial education to local administration. Prerequisite: 12 hours in technical subjects. C

495-3 Occupational Analysis. Involves the fundamental steps for analyzing trades and other occupations with some thought toward establishing appropriate units of instruction for the apprentice or student. Jobs, operations, and essential related information are analyzed. Prerequisite: 12 hours in technical subjects. C

496-3 Selection and Organization of Subject Matter. Selection and arrangement of teaching content; preparation of assignment, operation, information, and job sheets; preparation of tests. Prerequisite: 12 hours in industrial education. C

497-3 Teaching of Reading in Technological Education. An understanding of the literature available, one's obligation for keeping abreast of new developments and emphasis on reading and scanning for new ideas in student's specialized field. Prerequisite: 12 hours in industrial education. C

498-3 Planning Multiple Activity Programs. Philosophy, techniques and administration of laboratories and shops featuring multiple offerings. Prerequisite: consent of instructor. C

502-6 Measurements and Evaluations of Products and Procedures. Criteria and instrument development, testing techniques, and appraisals. Special emphasis given to the principles and methods of evaluation of progress in laboratory and shop subjects of a practical arts nature. Experience in development and construction of pertinent and effective evaluative devices. C

504-4 History of Industrial and Vocational Education. A study of the leaders, organizations and movements in the evolution of modern technological education. C

505-4 Administration and Supervision of Industrial Education. Principles, practices, and techniques relating to supervising and administering local programs. C

506-4 Co-operative Programs. Programs and procedures involved in setting up and operating co-operative work-study programs. C

540-2 to 6 Research in Technological Education. Basic research methods and techniques in the design, investigation, and reporting of research studies relating to technology and technological education. C

541-4 Occupational Information and Guidance. Designed for school counselors, industrial supervisors, and teachers to give them orientation to and experience with occupational information and vocational adjustment. Prerequisite: consent of instructor. C

550-4 College Teaching of Industrial and Technical Subjects. Problems of college students and their adjustments to college-level industrial and technical subject-matter. Organization of instructional materials; methods of instruction; organization

and administration of college laboratory facilities; and the professional problems, ethics, and advancement of college technical teachers. Prerequisite: 540 or Educational Administration and Supervision 500. C

560-2 to 12 (2 to 8 per quarter) New Developments in Technological Education. An intensive course designed to acquaint graduate students and teachers with the most recent and significant developments, pressing problems, and emerging trends in the industrial education and technical fields. Selected subjects will be considered by recognized authorities in the field, who will present their ideas and conduct discussions on the selected topics. C

570-2 to 6 Special Investigations in Industrial Education. C

580-3 to 9 Seminar in Technological Education. C

599-1 to 9 Thesis. C

INDUSTRIAL TECHNOLOGY

400-9 (3,3,3) Plastics Technology. (a) Uses of plastic materials including laboratory research and techniques using various methods of fabrication and processing of plastic materials. (b) Properties of high polymers, stability, testing, rheology, mechanical, electrical, thermal, optical and chemical properties, specialty uses. (c) Plastics as materials of construction and their uses in industrial applications, laminates, engineering properties of rubbers, foams, adhesives and surface coatings, designing with plastics; plastics in electrical applications. C

465-8 (4,4) Industrial Safety. (a) Basic fundamental principles of industrial accident prevention; significant accident statistics and costs; appraising safety performances; industrial plant hazards and safeguards; fire control fundamentals. (b) Effective industrial safety organizations, management and supervision; industry safety psychology; safety training programs; industrial hygiene programs; health safeguards; occupational diseases and other industrial hazards. Prerequisite: consent of instructor. C

506-2 to 12 Industrial Design Research. Individual research in industrial design. Prerequisite: 9 hours in industrial design or comparable experience in industry. C

INSTRUCTIONAL MATERIALS

400-2 Library Research Methods. Introduction to the use of library materials in graduate research. Includes a survey of scholarly publishing and the use of reference works in various subjects. CE

403-4 School Library Functions and Management. Effective library services in relation to the educational objectives of elementary and secondary school programs: organization, supervision, finance, housing, equipment, standards, and evaluation. CE

405-4 Library Materials for Children. Study of the aids, methods, and criteria for the selection and use of books and other instructional materials for children in the elementary schools. Open to juniors with consent of instructor. CE

406-4 Library Materials for Adolescents. A study of the aids, methods, and criteria for the selection and use of books and other instructional materials for students in the high school. Open to juniors with consent of instructor. CE

410-4 Public Library Administration. The administration of municipal, county, and regional libraries, both large and small, with emphasis on meeting the needs of different types of communities. C

417-4 Audio-Visual Learning Methods in Education. Selection and utilization of instructional materials in the learning environment, elementary through adult levels. Audio and visual materials and procedures are emphasized with some attention given to bibliographies and reference books for teachers. C

420-4 School Library Activities and Practice. Supervised practice and observation integrated with instruction in the typical activities of school librarianship: storytelling, publicity, developing units of library instruction, and work with students. Prerequisites: 306, 308, 403, 405, or 406. CE

440-2 Photography for Teachers. Techniques of picture-taking and the preparation of color slides of community resources for use in classroom instruction and for school public relations. C

445-4 Preparation of Teacher-Made Audio-Visual Materials. Laboratory practice in the preparation of bulletin boards, opaque materials, models, slides, recordings, felt-boards, and other graphic materials. Prerequisite: 417 or consent of instructor. CE

448-4 Supervision and Administration of an Audio-Visual Program. C

450-2 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV, and definition of responsibilities are included. Demonstration and a tour of production facilities are provided. C

457-4 Radio and Television in the Classroom. Educational programs and their value to the teacher in the classroom. Sample tapes of radio programs and kinescopes are used. C

458-4 The Medium of the Motion Picture. A study of the full range of expression by motion pictures including the documentary, theatrical, educational, experimental, and industrial films. Representative films are screened. C

470-4 Programmed Instruction. The principles and practice of writing both linear and intrinsic types of programmed instruction with emphasis on pictorial and performance branches. Individual experience in planning and producing programs. C

510-4 Mass Communications in Education. The use of mass media in the classroom. Includes radio, TV, comic books, newspapers, magazines, motion pictures. C

514-4 Survey of Research and Development in Instructional Materials. Advanced readings in research in instructional materials and the practical application of findings. Prerequisites: 405, 406, 417 or consent of instructor. C

530-4 History of Books and Libraries. The evolution of the printed book and the rise and development of modern libraries. C

546-4 Integration of Audio-Visual Materials in the Classroom. Selection of materials on the basis of curricular needs. Techniques of evaluating each type of audio-visual material for use in the classroom. Prerequisite: 417, consent of instructor. CE

547-4 School Film and Filmstrip Production. Simplified techniques for teachers and audio-visual co-ordinators who may need to produce school-made films and filmstrips to meet local school problems. C

548-4 Supervision and Administration of an Audio-Visual Program. Provides professional information and training for anyone who has administrative responsibilities for an audio-visual program. For teachers, co-ordinators, or directors. Prerequisite: 417, consent of instructor. CE

549-4 Visual Learning. Learning from pictures in the classroom, the design of still and moving pictures, pictures used in testing perception, and the place of pictures in advertising and communication. Prerequisite: consent of instructor. C

554-4 Administration of an Instructional Materials Center. Based on the concept of a single agency in the school that encompasses all forms of instructional materials. It is designed to further the training of specialists in the supervision and administration of integrated audio-visual and library programs. Prerequisites: 403, 548, Educational Administration and Supervision 456, 460, or equivalent. C

560-4 Seminar in Instructional Materials. Designed to give advanced graduate students an opportunity to investigate and discuss topics in instructional materials before the seminar group. Topics selected would depend on background and interest of individuals. Prerequisite: consent of instructor. C

576-2 to 8 Problems in Instructional Materials. Opportunity for individual study of selected problems. Prerequisite: consent of instructor. C

599-5 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

JOURNALISM

420-2 to 4 High School Journalism Clinic. For public school teachers. C

421-4 School Publications. Designed for the prospective journalism teacher or high

school publications director. Deals with practical production problems of newspapers and yearbooks. C

422-3 Teaching High School Journalism. Teaching methods of journalism in secondary schools, organization and course of study, bibliography, use of journalism courses for school publications production. C

432-3 Communication Agencies and Public Opinion. Press, radio, television, and motion pictures and their role in the opinion process. C

433-3 Measurement of Public Opinion. The sampling survey as a research tool; survey methodologies. C

440-3 Content Analysis. Theory and practice of various systems designed to reveal the orientation of editorial material in the mass media. C

442-3 The Law of Journalism. C

449-2 Practicum. Study, observation, and participation in publication supervision. Work required on *The Egyptian* newspaper. C

479-3 Role of Advertising in our Society. An exhaustive analysis of the literature covering such topics as: definitions and scope of advertising; advertising and the press; advertising as a social and economic force; evaluation of advertising; policies as related to the practices of specific business firms. C

494-2 Magazine Article Writing Workshop. C

495-3 Book Reviewing. Theory and practice in reviewing modern books; study of newspapers and magazines devoted entirely or in part to this type of journalism. C

499-3 Summer Workshop in News Analysis in the Classroom. A study of the relationship of the newspaper to other high school coursework. Time spent in developing ways of integrating the newspaper in the classroom. C

501-1 to 9 Literature of Journalism. Critical reading of selected books relating directly and indirectly to journalism; lectures; reviews; discussions. C

530-2 Seminar in Press Freedom. Observation of the comment function performed by the daily newspaper as related to current issues; role of the editorial writer, syndicated columnist, cartoonist. C

532-4 Seminar in Public Opinion and Propaganda. Study of the developing literature in this field of specialization. C

533-1 to 9 Research Problems in Journalism. Individual work on selected problems for research. C

540-3 Philosophy of Journalism. A study of journalistic ethics with emphasis on concepts of freedom and responsibility and the development of journalistic standards. Consideration given to study of the responsibility of press in modern society. C

599-3 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-1 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

MANAGEMENT

421-4 Management of Business Finance. The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Scope includes both short-term working capital and long-term financing. Prerequisite: 320.. CE

428-4 Life Insurance. Particular attention given to policy forms and provisions, reserve and investment problems, company organization, legal aspects, taxation, and personal and business needs. Prerequisite: 327. C

442-4 Management of Data Processing Systems. A systematic examination of the principles and practices of data processing management. Includes installation layout, employment requirements, machine utilization, scheduling, work loads, interdepartmental relations, legal considerations, etc. Prerequisite: 241. E

455-4 Programming for Digital Computers. Computer organization and characteristics, machine language-coding, flow charts, sub-routines, optimum and symbolic coding, compilers and interpretative systems. Laboratory uses Computing Center equipment. Prerequisite: consent of instructor. C

472-5 (C); 472-4 (E) Small Business. Small business analysis, primarily through case

studies of business financing, location, organization, merchandising practices, records, government regulation, and taxes. Open only to business majors. CE

473-4 Business Enterprise and Public Policy. A social and legal evaluation of the federal laws designed to stimulate competition, emphasizing the anti-trust and fair trade laws. Prerequisite: senior standing. CE

475-4 Budgeting and Systems. Budgeting and system as aids in coordinating and directing business operation. Prerequisites: 320. Accounting 251c. CE

479-2 to 8 Problems in Business and Economics. Application of economic theory to practical business problems. CE

480-4 Recent Labor Law Developments and Problems. A legal and social evaluation of the most recent labor law problems and court decisions, including the Taft-Hartley Act and the 1959 amendments, Fair Employment Practice Laws and the Fair Labor Standards Act. Prerequisite: business law or Economics 310 or Government 395 or consent of instructor. CE

481-4 Administrative Management. An intensive study of the principles of management and their application to the current industrial setting. Lecture and case methods will be used. Prerequisite: 340. CE

483-4 Advanced Production Management. Internal problems of managerial control of production including recent developments in theory and techniques; case material will be utilized for the development of analytical ability. Prerequisite: 380. CE

485-4 Problems in Personnel Management. Analysis of problems in personnel administration arising from current developments in organization and techniques; case problems and special reports. Prerequisite: 385. CE

500-2 to 5 Readings. Directed readings in classical and current writings on selected topics. C

501-2 to 5 Individual Research. Directed research in selected areas of business administration. C

521-4 Financial Policies. An evaluation of selected financial policies of corporate enterprise with emphasis on capital budgeting, on the equity and current position. Prerequisite: 320 and consent of instructor. C

527-3 to 5 Seminar in Finance. Current issues and practices in business finance. Each student will select a problem for intensive exploration and report his findings to the class. Prerequisite: 421 or consent of instructor. C

540-5 History and Theory of Management. An analytical study of the background and growth of management theory from its beginnings with Taylor and Fayol to the present. Emphasis will be largely on industrial application. Individual reports as well as case and lecture methods will be used. Prerequisite: 481. C

573-4 Business and Government. The regular regulation of industry and labor, emphasizing complications for firm policies of the most current developments and court decisions. Topics include current industrial and labor monopoly, administrative regulation, consumer interest, credit management, and the proper role of the judge, management, union and association. Prerequisite: graduate standing or consent of instructor. C

576-4 Business Conditions Analysis. Adaptation of business conditions indicated by measurements, evaluating, and forecasts of the individual firm. Prerequisite: graduate standing or consent of instructor. C

581-4 Business Policies. Consideration of the policies of the top management of a business relative to alternative choices of action. Prerequisite: graduate standing or consent of instructor, applied decision theory. C

594-4 Seminar in Management. Study of the most recent developments in a particular area of management. Individual reports, book reports, and survey of current professional literature form the bases of the course. Prerequisite: 340 or consent of instructor. C

595-4 Seminar in Personnel Management. Study of recent developments in personnel management. Individual reports, book reports, and survey of current professional literature form the bases of the course. Prerequisite: 485 or consent of instructor. CE

596-4 Seminar in Production Management. Current theories in production manage-

ment. Individual reports, book reports, and survey of professional literature form the bases of the course. Prerequisite: 483 or consent of instructor. C
 599-2 to 9. Thesis. Minimum of 5 hours to be counted toward a master's degree. C

MARKETING

438-4 Sales Management. Developing and training a sales force. The different types of sales forces. Managing sales functions: determining salesmen's territories, quotas, compensation. Budget preparation. Development and implementing the merchandise plan. Prerequisite: 325 or to be taken concurrently (C); 230 and 237 or consent of instructor. (E). CE

444-4 Marketing Management. Marketing management's place in theory and as a part of the marketing process. Emphasis given to planning the marketing effort, management of the marketing organization and control of marketing operations. Prerequisite: 230-5, senior standing. E

451-4 Traffic Management. Primary industrial traffic management functions, including determination of rates, classification, routing, and proper documentation. Consideration given to loss and damage claims, terminal charges, demurrage, reconsignment and conversion, transit privileges, warehousing, and packing. Emphasis upon co-operative aspects of traffic management requiring transportation. Prerequisite: 341. CE

463-4 (C); 463-3 (E) Advertising Management. The effective use of advertising by business management. An understanding of what advertising can be expected to accomplish under different sets of marketing factors and products. The selection of advantageous advertising programs under different marketing mixes. Prerequisite: 333 or consent of instructor (C); 333 (E). CE

490-4 Marketing Research and Analysis. A nonmathematical development of the basic procedures, methods, and theory underlying analysis of primary and secondary market data. Prerequisites: 325, and one quarter of basic statistics or its equivalent (C); 230 and a quarter of business statistics (E). CE

500-2 to 5 Readings in Marketing. Readings in classical and current writing on selected topics in various areas in the field of marketing. C

501-2 to 5 Individual Research in Marketing. Directed research in marketing. C

550-4 Graduate Survey of Marketing. Designed to give the graduate student an over-all view of the field of marketing and the field of policy-making decision. Cases are used to illustrate the theory covered. An accelerated course. (Not open to students who have had 10 or more hours of marketing in their undergraduate preparation.) CE

555-4 Marketing Theory. An advanced course which relates theory in related disciplines with evolving marketing concepts. The development of marketing thought, theory of market behavior, and an appraisal of the application of existing theory are emphasized. Prerequisites: 325, 550 or equivalent. C

560-4 Marketing Policies. The marketing management approach in the determination of policies employed in solving problems in marketing. Prerequisites: 325, 550 or equivalent. CE

575-4 Seminar in Transportation. Students will be required to investigate and discuss before the seminar group such topics as inter-carrier competition, rate level adjustment, financing, and public policy considerations. Subjects and procedures to be arranged at the first meeting of the course. Prerequisite: 451 or consent of instructor. C

590-4 Advanced Marketing Research and Analysis. The development of advanced procedures, methods and theory of quantitative and qualitative analysis of primary and secondary marketing data. Prerequisite: 490 or consent of instructor. C

595-3 Seminar in Marketing. Problems in marketing theory, research, and policy. May be repeated by a student no more than two times. Prerequisite: 325 or 550. CE
 599-2 to 9 Thesis. CE

MATHEMATICS

400-3 History of Mathematics. An introduction to the development of major mathematical concepts. Particular attention given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in the development of mathematics from 600 B.C. Prerequisite: 150b (E), 320a or consent of instructor (C). CE

407-3 Introduction to Partial Differential Equations. A continuation of 305. Topics in applied mathematics including linear partial differential equations, Bessel functions, and vector analysis. Prerequisite: 305b. CE

410-16 (4,4,4,4) Statistical Analysis. For students in fields using statistical methods but who are not required to take calculus. Includes (a) elements of probability, estimation, and testing hypotheses; (b) the general linear model (multiple linear regression, analysis of variance, analysis of covariance) and non-parametric statistics; (c) design of experiments; (d) sample survey techniques. May not be used to satisfy requirements for a mathematics concentration. Three lectures and two laboratory hours per week. Must be taken in either a,b,c,d or a,b,d,c sequence. Prerequisites: GSD 108c or 114b. CE

413-4 Solid Analytic Geometry. An algebraic study of equations of the first and second degree in three variables, with applications to geometry. Systems of planes; equations of lines in symmetric and parametric form. Spheres, cylinders, surfaces of revolution. Matrix algebra; real orthogonal and symmetric matrices. Coordinate transformations; orthogonal similarity. Quadratic forms and quadric surfaces; invariants; principal axes and planes. Prerequisite: 252b or consent of chairman. CE

415-4 Non-Euclidean Geometry. An introduction to hyperbolic and elliptic plane geometry and trigonometry. Emphasis given to the nature and significance of geometry and the historical background of non-Euclidean geometry. Prerequisite: 252a. E

420-3 Orthogonal Functions. Principal emphasis on Fourier series and applications. Also includes discussion of other orthogonal sets, such as the Legendre's polynomials, and orthogonalization procedures, such as Gram-Schmidt. Prerequisite: 252b. C

421-6 (3,3) Linear Algebra. The theory of determinants and systems of linear equations; vector spaces, linear independence, bases, dimension; linear transformations, change of base, similarity; quadratic and Hermitian forms, orthogonal and unitary transformations; triangular and diagonal form; eigenvalues and eigenvectors; normal matrices; nilpotent and idempotent matrices, the spectral theorem. Must be taken in a,b sequence. Prerequisite: 252b. CE

425-3 Theory of Numbers. Topics in elementary number theory, including properties of integers and prime numbers, divisibility. Diophantine equations, and congruence of numbers. Prerequisite: 320a. CE

426-6 (3,3) Mathematical Logic. (Same as Philosophy 426.) (a) Matrix and set theoretic development of the propositional calculus, many-valued logics, modal logics. Completion and consistency proofs for the propositional calculus. (b) A formal development of the predicate calculus and related problems. Must be taken in a,b sequence. Prerequisite: 320a or consent of instructor. C

430-4 Projective Geometry. Introduction to the fundamental concepts of projective geometry. Topics usually include the study of conics, polar systems of conics, homogeneous coordinates, cross-ratio, harmonic sets, duality, projectivities, and involutions. Prerequisite: 252a or consent of instructor. CE

433-3 Theory of Point Sets. General properties of sets; topology of plane sets; closed sets and open sets in metric spaces, homeomorphisms and continuous mappings, connectedness. Prerequisite: 252b and six credits in courses numbered 300 or higher, or consent of instructor. CE

440-2 to 4¹ Modern Algebra for Teachers. An introduction to algebra as a logical system, including groups, rings, and fields. Prerequisite: consent of instructor. CE

442-2 to 4¹ Survey of Geometry. A survey of geometry, including projective geometry, topology, etc. Prerequisite: consent of instructor. CE

446-4 The Structure of Elementary School Mathematics. E

- 447-4 The Structure of Secondary School Mathematics.** E
- 452-9 (3,3,3) Advanced Calculus.** Fundamental concepts of analysis: limits, continuity, differentiation, and integration. Major topics include partial differentiation, vector analysis, Riemann-Stieltjes integrals, multiple integrals, infinite series, improper integrals, uniform convergence, Fourier series, and line and surface integrals. Must be taken in a,b,c sequence. Prerequisite: 252b. CE
- 456-6 (3,3) Applied Mathematics for the Behavioral Sciences.** Introduces students in the behavioral sciences to general mathematical procedures as an aid to analyzing the structures of their study and to particular techniques that are in current use. Includes: sets and proportional logic, partitioning and combinatorial analysis, probability theory, linear algebra, linear programming and game theory, difference equations. The mathematical content is at an introductory level; applications from the behavioral sciences are used throughout. Must be taken in a,b sequence. Prerequisite: GSD 108c or 114b. CE
- 460-4 Modern Geometry.** Advanced topics in Euclidean geometry by the synthetic method. Topics include the nine-point circle, Simson line, theorems of Ceva and Menelaus, coaxal circles, harmonic section, poles and polars, similitude, and inversion. Prerequisite: 20 hours of college mathematics. CE
- 475-9 (3,3,3) Numerical Analysis.** Introduction to approximation methods including finite differences and interpolation; numerical differentiation and quadrature; least squares approximation; numerical solution of linear and non-linear systems; numerical integration of systems of ordinary and partial differential equations. Emphasis upon error analysis throughout. Must be taken in a,b,c sequence. Prerequisite: 305a or 252b and consent of instructor. CE
- 480-10 (4,3,3) Probability.** Introduction to probability theory. Includes the algebra of probabilities; discrete and continuous distributions, limit theorems, generating functions, and some elements of stochastic processes. Must be taken in a,b,c sequence. Prerequisite: 252b. CE
- 483-4 Statistical Inference.** A mathematical introduction to statistical methods. Topics include sampling distributions, estimation, tests of hypotheses, and regression analysis. Prerequisite: 480a. CE
- 484-4 Design of Experiments.** A study of the mathematical and practical considerations involved in the statistical design and analysis of experiments. Consideration given to common experimental designs and such topics as missing plots, experimental constraints, efficiency of method, and separation of degrees of freedom. Prerequisite: 483. CE
- 501-9 (3,3,3) Real Variables.** A basic course in mathematical analysis. (a, b) The real number system; fundamental theorems in limits and continuity; open, closed, compact, and connected sets in Euclidean and metric spaces; the Riemann and the Riemann-Stieltjes integrals and functions of bounded variation; infinite series; uniform continuity; uniform convergence of series and improper integrals; arcs and curves; implicit function theorem; multiple integrals. (c) The general theory of measure and integration from an abstract point of view. Additive classes of sets, Borel sets, measurability, measure and outer measure; integrable functions, convergence theorems; absolute continuity and the Radon-Nikodym theorem; Fubini's theorem. Must be taken in a,b,c sequence. Prerequisite: 452c. CE
- 510-4 Foundations of Mathematics.** A critical survey of the logical basis of mathematical systems. Deductive processes, mathematical proof theory, axiomatics, nature of model systems, principles of theory construction, views concerning the nature of mathematics. Prerequisites: 252b, or consent of instructor. CE
- 520-8 (4,4) Modern Algebra.** Displays some of the richness of algebra when mathematical systems other than the traditional one based upon the real numbers are considered. Abstract theory of groups, rings, and fields, with particular attention to examples from permutation groups, matrices, vector spaces, and polynomial and other

¹ These courses are open to candidates for the M.S. in Ed. degree in mathematics, to National Science Foundation Institute participants, and to those who have received the consent of the chairman of mathematics or the director of the institute.

function spaces; rational numbers and fields, complex numbers, unique factorization, algebraic number fields. Must be taken in a,b sequence. Prerequisite: 320a and 421a. CE

530-3 to 6 Point Set Topology. Topological spaces; denseness, category; open, closed sets, Borel sets; separation axioms; subspaces; continuity; lattice of topologies; countability axioms; connectedness, compactness, local properties; regularity to complete normality. Hilbert space, metrizable spaces; extension theorems; well-ordering; product spaces. Prerequisite: 433 or 501b. CE

536-3 Differential Geometry. Curvature, torsion, the Frenet formulas, and intrinsic equations of curves in three-dimensional Euclidean space; applications to kinematics. Curves on a surface; first and second fundamental forms; normal sections and Meusnier's theorem; mean and total curvature. Prerequisite: 452c. C

540-4¹ Groups and Linear Transformations. A study of groups with their connection with the movements of regular plane figures, matrices, vectors, determinants with their interpretation and use in analytic geometry, and ruler and compass constructions. Prerequisite: 440 or equivalent. CE

541-2 to 4 Sets and Probability. The elements of probability, with some applications to social sciences for secondary school teachers. Prerequisite: consent of instructor. E

542-2 to 4 Elementary Functions from an Advanced Standpoint. Analysis of properties of algebraic, trigonometric, exponential, and logarithmic functions using contemporary notion of function. Prerequisite: consent of instructor. E

544-2 to 4¹ Fundamental Concepts of Calculus. A careful study of the basic concepts of calculus offered as part of the special graduate program for secondary school teachers. Prerequisite: consent of instructor. CE

545-4¹ Intermediate Analysis for High School Teachers. A rigorous development of differentiation and integration of continuous real functions. Topics include sequences, series, limits, real continuous functions, integrable functions on a closed interval. Prerequisite: consent of instructor. C

546-4¹ Convex Figures. An analysis of methods of the theory of plane convex bodies. Topics covered include Helly's Theorem, continuous functions, isoperimetric problems, curves of constant width. Prerequisite: 440, 543 (or 415), or consent of instructor. C

550-1 to 10 Seminar. Supervised study and preparation of reports on assigned topics. Reports presented for class discussion. (a) Algebra; (b) Geometry; (c) Analysis; (d) Probability and Statistics; (e) Mathematics Education. Prerequisite: consent of instructor. CE

555-6 (3,3) Complex Variables. A thorough treatment of classical analytic function theory including the Cauchy-Riemann equations, conformal mapping, Riemann mapping theorem, Cauchy-Goursat theorem, calculus of residues, analytic continuation, entire functions, gamma and beta functions, Bessel's and Legendre's equations, elliptic integrals. Must be taken in a,b sequence. Prerequisite: 452c. CE

560-3 Calculus of Variations. For students in mathematics and the sciences as an introduction to the ideas and techniques of the calculus of variations. Topics covered include the Euler equation, the brachistochrone problem, minimal surfaces, isoperimetric problems, Fermat's principle, particle dynamics and Sturm-Liouville systems. Prerequisite: 452c. C

580-9 (3,3,3) Mathematical Methods of Statistics. A presentation of probability and statistical inference based on an axiomatic approach and employing advanced mathematical concepts. Topics include the theory of measure and integration in R_n , foundations of probability, random variables and distributions in R_n , sampling distributions, tests of hypotheses, theory of estimation. Must be taken in a,b,c sequence. Prerequisite: 452c. C

592-3¹ Research in Mathematics Education. Critical study of research papers in

¹ These courses are open to candidates for the M.S. in Ed. degree in mathematics, to National Science Foundation Institute participants, and to those who have received the consent of the chairman of mathematics or the director of the institute.

the field of secondary mathematics education. Training in research and writing techniques as they pertain to the secondary mathematics program. Prerequisite: consent of chairman. C

595-1 to 10 Special Project. An individual project, including a written report. (a) in algebra; (b) in geometry; (c) in analysis; (d) in probability and statistics; (e) in mathematics education. CE

599-1 to 9 Thesis. Minimum of 5 hours to be counted toward the M.A. degree. C

MICROBIOLOGY

403-5 Medical Bacteriology. A general survey of the mechanisms of infection, epidemiology, and immunity and the specific application of these principles to the symptomatology, diagnosis, treatment, and control of the more common bacterial infections of man. 3 hours lecture and 4 hours laboratory. Prerequisite: 301 and 302 or equivalent. C

422-5 Microbiology of Foods. The relationships of microorganisms to the preparation and preservation of foods with consideration of the laws governing sanitation, chemical preservatives, and fair dealing of the food producer. 3 hours lecture, 4 hours laboratory. Prerequisite: 301. C

423-5 Industrial Fermentation. The application of the chemical activities of microorganisms to the industrial production of beverages, foods, antibiotics, and various commercial chemicals. 3 hours lecture, 4 hours laboratory. Prerequisites: 301 and organic chemistry. C

425-3 Biochemistry and Physiology of Microorganisms. The chemical basis of physiological functions in microbial cells with emphasis on the pathways of metabolism common to all living things. 3 hours lecture. Prerequisites: 301 and organic chemistry. C

426-2 Biochemistry and Physiology of Microorganisms. 4 hours laboratory. Prerequisite or corequisite: 425. C

441-6 Virology. Properties, cultivation and titration of viruses and rickettsiae; cellular infection, multiplication and liberation of virus; immunological reactions and serological identification; hemagglutination and interference phenomena. Consideration of selected viral and rickettsiae diseases of animals. 3 hours lecture, 6 hours laboratory. Prerequisite: 403. C

451-6 Immunology. Natural and acquired immunity; antigens, antibodies and antigen-antibody reactions; hypersensitivity; practical use of immunity and hypersensitivity. 3 hours lecture, 6 hours laboratory. Prerequisite: 403. C

500-1 Seminar. C

501-2 Genetics of Microorganisms. The general principles of genetic analysis with accent on tetrad analysis of yeast. 2 hours lecture. C

503-2 Cytology of Microorganisms. Problems involved in the behavior of chromosomes at meiosis with special consideration of genetical data. 2 hours lecture. C

504-5 Methods of Microbiological Research. The recognition and plan of attack upon unsolved problems in microbiology. 3 hours lecture and 4 hours laboratory. C

506-2 Bibliographical Methods in Microbiology. Methods of communication of information in microbiology. 1 hour lecture, 2 hours laboratory. C

511-1 to 15 Research. C

525-3 Biochemistry and Physiology of Microorganisms. A continuation of 425. 3 hours lecture. C

526-2 Biochemistry and Physiology of Microorganisms. A continuation of 426. 4 hours laboratory. Prerequisite or corequisite: 525 C

528-1 to 10 Readings in Microbiology. Supervised readings for qualified graduate students. C

550-4 Microbiology for High School Teachers. Principles of microbiology with emphasis on the relation of the microbial world to plants and animals. Information regarding materials and methods applicable to high school biology courses. 2 lectures and 2 laboratory periods or field trips per week. Offered only for N.S.F. students. C

551-2 Intermediate Microbiology for High School Teachers. Continuation of 550

with emphasis on recent developments in microbial genetics, aspects of medical bacteriology, immunology, and virology. Two lectures and occasional demonstrations. C
552-1 Seminar in Biological Sciences. Discussion of topics in biology of particular interest to high school biology teachers. C
599-3 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C
600-3 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

MUSIC

- 411-3 Music Literature.** Development of the symphony and the symphonic poem to 1900. CE
412-3 Choral Literature. The literature of the larger vocal forms such as the cantata and oratorio to 1900. C
413-3 Chamber Music Literature. Chamber music literature from the Renaissance to the present. C
441-6 (2,2,2) Counterpoint. (a) 16th Century Counterpoint. Species counterpoint and creative writing in the style of Palestrina and his contemporaries. Prerequisite: 207. (b) 18th Century Counterpoint. Analysis and creative writing in the contrapuntal-harmonic technique of Bach and his contemporaries. Prerequisite: 442. (c) Canon and Fugue. Analysis and creative writing of the larger imitative forms. Prerequisite: 442. C
442-6 (3,3) Contrapuntal Forms. (a) Analysis and creative writing in the style of Palestrina and his contemporaries and the contrapuntal-harmonic technique of Bach. (b) Analysis and creative writing of the larger imitative forms. Must be taken in a,b sequence. Prerequisite: 205c. E
451-2 The Teaching of General Classroom Music (C); 451-2 The Teaching of General Classroom Music in the Junior and Senior High School (E). CE
455-2 to 6 Elementary Music Education Workshop (C); 455-4 Workshop for Elementary Music Education (E). CE
461-2 Teaching Techniques and Materials for the Beginning and Intermediate Levels (C); 461-6 (3,3) Teaching Techniques and Materials (E). For piano or voice students in the B.Mus. or M.Mus. degree programs. Problems of private, studio teaching and college-level teaching are discussed. CE
462-2 Teaching Techniques and Materials for the Advanced Student. Continuation of 461. E
465-3 Development and Teaching of Strings. Place and function of string education in the elementary and secondary schools. Techniques of heterogeneous and homogeneous string teaching. Developing and sustaining interest in the string program. Resource aids. Prerequisite: senior standing. E
481-2 to 6 Readings in Music Theory. C
482-2 to 6 Readings in Music History and Literature. C
483-2 to 6 Readings in Music Education. C
501-3 Introduction to Graduate Study in Music. Basic bibliographical and research techniques in music theory, literature, and education. C
502-9 (3,3,3) History and Analysis of Musical Style. Style in relation to evolution of musical materials. CE
503-3 Objective Research Techniques in Music Education. C
512-3 History of Opera. The development of opera as a form, with a detailed study of operas since 1600. C
515-3 20th Century Literature. A survey of contemporary music in Russia, Western Europe, and the Americas in its relation to sociology, political, and cultural developments. CE
518-3 Pedagogy of Music Literature. Principles of teaching music literature and music appreciation courses at the college level. CE
520-3 American Music. The development of music in America from colonial days to present. CE

- 522-3 Seminar: Music History and Literature.** Advanced study in special periods of music history-literature. Offered on demand. CE
- 530A-3 to 9 Music History. 530B-3 to 9 Music Literature. 530C-3 to 9 Music Theory.** C
- 531-2 to 9 Advanced Composition.** Composition in the larger forms for solo and ensemble performance. Prerequisites: 312c, 342c, and consent of instructor. Required of all theory-composition majors three hours per term; elective credit for majors in other areas. C
- 535-3 Contemporary Idioms.** Techniques of composition developed during the 20th century by composers of Europe and America. CE
- 545-3 to 9 Philosophy of Music Theory.** An orientation of the philosophies of theory to the problems of pedagogy. Required of all theory-composition majors. C
- 550-2 to 4 Organization and Administration of Music—Elementary (C); 550-8 (4,4) Organization and Administration of the Music Education Program (E).** CE
- 551-2 to 4 Organization and Administration of Music—Secondary.** C
- 553-3 Seminar in Choral Materials and Techniques (C); 553-6 (3,3) Seminar in Materials and Techniques (E).** CE
- 554-3 Seminar in Instrumental Materials and Techniques.** C
- 556-2 to 6 Advanced Conducting.** Problems in score reading and interpretation. Laboratory conducting of larger ensembles. CE
- 560-2 to 3 Seminar in Music Education.** Trends, current practices, philosophies of music education. CE
- 566-1 to 4 Instrumental Ensemble.** Participation in a chamber or large ensemble for purposes of studying and performing literature in the field of the major instrument other than solo literature. CE
- 567-1 to 4 Vocal Ensemble.** Participation in a chamber or large ensemble for purposes of studying and performing literature in the field of the vocal music other than solo literature. Includes madrigal groups, choral ensembles, women's chorus, etc. CE
- 568-2 to 8 Opera Workshop.** An intensive course in opera for voice majors, including the study and public performances of scenes and entire operas. C
- 599-3 to 9 Thesis.** C

APPLIED COURSES

440a-2 to 4 Private Violin.	E	540a-2 to 4 Private Violin.	E
440b-2 to 4 Private Viola.	E	540b-2 to 4 Private Viola.	E
440c-2 to 4 Private Violoncello.	E	540c-2 to 4 Private Violoncello.	E
440d-2 to 4 Private String Bass.	E	540d-2 to 4 Private String Bass.	E
440e-2 to 4 Private Flute.	E	540e-2 to 4 Private Flute.	E
440f-2 to 4 Private Oboe.	E	540f-2 to 4 Private Oboe.	E
440g-2 to 4 Private Clarinet.	E	540g-2 to 4 Private Clarinet.	E
440h-2 to 4 Private Bassoon.	E	540h-2 to 4 Private Bassoon.	E
440i-2 to 4 Private Saxophone.	E	540i-2 to 4 Private Saxophone.	E
440j-2 to 4 Private Percussion.	E	540j-2 to 4 Private Percussion.	E
440k-2 to 4 Private Piano.	E	540k-2 to 4 Private Piano.	E
440l-2 to 4 Private French Horn.	E	540l-2 to 4 Private French Horn.	E
440m-2 to 4 Private Trumpet.	E	540m-2 to 4 Private Trumpet.	E
440n-2 to 4 Private Trombone.	E	540n-2 to 4 Private Trombone.	E
440o-2 to 4 Private Tuba.	E	540o-2 to 4 Private Tuba.	E
440p-2 to 4 Private Baritone.	E	540p-2 to 4 Private Baritone.	E
440q-2 to 4 Private Voice.	E	540q-2 to 4 Private Voice.	E
		540r-2 to 4 Private Organ.	E
440r-2 to 4 Private Organ.	E		
471-2 to 8 Private Piano.	C	571-4 to Private Piano.	C
472-2 to 8 Private Voice.	C	572-4 to 16 Private Voice.	C
473A-2 to 8 Private Violin.	C	573A-4 to 16 Private Violin.	C
473B-2 to 8 Private Viola.	C	573B-4 to 16 Private Viola.	C
473C-2 to 8 Private Cello.	C	573C-4 to 16 Private Cello.	C

473D-2 to 8 Private String Bass.	C	573D-4 to 16 Private String Bass.	C
474A-2 to 8 Private Flute.	C	574A-4 to 16 Private Flute.	C
474B-2 to 8 Private Oboe.	C	574B-4 to 16 Private Oboe.	C
474C-2 to 8 Private Clarinet.	C	574C-4 to 16 Private Clarinet.	C
474D-2 to 8 Private Bassoon.	C	574D-4 to 16 Private Bassoon.	C
474E-2 to 8 Private Saxophone.	C	574E-4 to 16 Private Saxophone.	C
475A-2 to 8 Private Trumpet.	C	575A-4 to 16 Private Trumpet.	C
475B-2 to 8 Private French Horn.	C	575B-4 to 16 Private French Horn.	C
475C-2 to 8 Private Baritone.	C	575C-4 to 16 Private Baritone.	C
475D-2 to 8 Private Trombone.	C	575D-4 to 16 Private Trombone.	C
475E-2 to 8 Private Tuba.	C	575E-4 to 16 Private Tuba.	C
476-2 to 8 Private Organ.	C	576-4 to 16 Private Organ.	C
477-2 to 4 Private Percussion	C	577-2 to 16 Private Percussion.	C

PHILOSOPHY

406-4 Philosophy of Biology. Leading concepts of biological sciences: species, evolution, life, organism and part, etc. Abstract ideas of biology are related, wherever possible, to specific experiments recorded in scientific literature. Prerequisites: 300 or 320, and three laboratory or field courses in the biological sciences or consent of instructor. C

415-3 Logic of the Social Sciences. Logical and epistemological examination of the social studies as types of knowledge. Basic problems in philosophy of science with major emphasis upon social science: relationship of theory to fact, nature of induction, nature of causal law, testability, influence of value judgments, etc. Intended for students with considerable maturity in a social science or in philosophy. C

420-4 Advanced Logic. A careful study of symbolic and discursive systems of logic: Aristotle, Spinoza, Boole, Whitehead, and Johnson. Prerequisites: 320 and consent of instructor. C

426-6 (3,3) Mathematical Logic. (See Mathematics 326.) C

428-3 Logic of the Exact Sciences. Critical study of the technical and philosophical problems associated with formal logic and its uses as a tool for model construction, for formalizations, reconstructions, and as an image of rational thought. Prerequisites: 426-6 or consent of instructor. C

441-4 Philosophy of Politics. (Same as Government 441.) Some of the central problems of modern political life, such as sovereignty, world government, authority and consent, the relations of economics and social studies to political theory. Prerequisite: GSC 102 or 340 or consent of instructor. C

443-4 Philosophy of History. Classical and contemporary reflections on the nature of history and historical knowledge as the basis for dealing with the humanities. Prerequisite: consent of instructor. CE

460-4 Advanced Philosophy of Art. The definition of art, its relations to science, culture, and morals; the various types of art defined. Familiarity with at least one of the fine arts is assumed. Prerequisites: GSC 207 or 360, and six courses in music, painting, sculpture, literature, or drama. C

477-4 Latin American Philosophy. A survey of philosophic thought in Latin America from colonial times through nineteenth century positivism and the reactions against it, up to recent trends. Reading of original texts in English translations. Discussions and reports. C

478-4 Seminar in Latin American Thought. (See Spanish 478.) C

481-6 (3,3) 19th Century European Philosophy. (a) Kant, Schopenhauer, and Hegel. (b) Nietzsche, Bergson, the Utilitarians, and latter day idealists. May be taken singly and in any sequence. C

482-3 Recent European Philosophy. Phenomenology. Positivism, Linguistic Analysis, and Existentialism. C

484-12 (4,4,4) History of Western Political Theory. (a) Ancient and Medieval.

(b) Renaissance and Rationalist. (c) Contemporary. Any part may be taken alone. E
 487-4 **American Political Ideas.** An historical study of the political ideas of leading American statesmen and publicists, and their resulting influences upon our government system. E

490-2 to 12 **Special Problems.** Hours and credits to be arranged. Courses for qualified seniors and graduates who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics for individual study and papers or for group study. Consent of instructor in all cases required. CE

500-2 to 4 **Seminar in Metaphysics.** Study of recent writers and current problems in metaphysics with the intent of familiarizing the student with the traditional problems of the area. C

501-2 to 4 **Seminar in the Philosophy of Religion.** Analysis of a selected problem in philosophical theology or the phenomenology of religion, or of the work of a particular thinker. Recent seminars have been on Paul Tillich and Henry Nelson Wieman. C

515-3 **Theory of Nature.** A critical examination of the presuppositions of the Western view of nature as indicating the need for a revision of causal determinism and the re-introduction of freedom into the spatio-temporal world. C

530-2 to 4 **Seminar in Theory of Knowledge.** Examination of a contemporary writer or problem in epistemology. Special emphasis is given to the problem of the reliability and structure of scientific knowledge. C

540-3 **Philosophy of Journalism.** (See Journalism 540.) C

570-3 **Seminar in American Idealism.** C

581-2 to 4 **Seminar in Plato.** A thorough study of several of the dialogues. Lectures on the system of Plato as a whole, discussions and reports on the readings. C

582-2 to 4 **Seminar in Aristotle.** The philosophic ideas of Aristotle. Intensive reading of several texts, illustrating widely varied portions of his thought. C

585-3 **Seminar in British Empiricism.** C

586-2 to 4 **Seminar in Spinoza.** Analysis of the *Improvement of the Understanding* and the *Ethics*. Lectures relating Spinoza to the medieval tradition and to his contemporaries. Discussions and reports. C

587-3 **Seminar in Hegel.** C

588-2 to 4 **Seminar in Kant.** The three great *Critiques* in their relation to the development of Kant's total philosophy. Intensive study of one of the *Critiques*. C

589-2 to 12, 590-2 to 12. **General Graduate Seminar.** For students having special interests in the history of philosophy and the original systematic development of philosophic ideas. Prerequisite: consent of instructor. C

591-1 to 5 **Readings in Philosophy.** Supervised readings for qualified students. Consent of instructor required. C

599-2 to 9 **Thesis.** Minimum of 5 hours to be counted toward a master's degree. C

600-3 to 48 **Dissertation.** C

PHYSICAL EDUCATION

400-4 **Evaluation in Physical Education.** Historical background of measurement in physical education; selection and evaluation of contemporary testing devices; structure and use of tests; administering the testing program; and interpretation and application of results. Fulfills the tests and measurements course requirements for the Master of Science in Education degree. C

402-3 **Organization and Administration of Intramural and Extramural Activities.** Planning intramural programs of sports; planning and co-ordinating extramural activities commonly associated with physical education. CE

403-4 **The Adaptation of Physical and Recreational Activities to the Handicapped Individual.** Recognition of postural deviations; devising and planning programs for the physically atypical. C

404-4 The Teaching of Sports. Teaching methods, officiating, organization, safety precautions, and selecting equipment for sports. C

405-4 Current Theories and Practices in the Teaching of Dance. History and evolution of dance; place of dance in education. C

406-4 Basic Concepts of Physical Education. The place of physical education in the school program, and the concepts underlying the program. (Required of all students not presenting the undergraduate courses 354 or 340.) C

408-2 to 4 Workshop: Physical Fitness—Its Role and Application in Education. Improvement of programs and teaching techniques involved in the development of various aspects of physical fitness. Units on postural status; body weight control; tension factors, causes, and control; exercise tolerance; and general body mechanics and control. C

420-4 (C); 420-3 (E) Physiologic Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: Physiology 209 or equivalent. CE

500-4 Techniques of Research. Critical analysis of research literature; study of research methods and planning research studies. Prerequisite: 400 or concomitant registration in 400. C

501-4 Curriculum in Physical Education. Principals and procedures for curriculum construction and revision; criteria for selecting activities and judging outcomes and the place of the physical education course of study within the total curriculum. CE

502-4 Foundations of Motor Skills. Application of physiological, kinesiological, and mechanical principles to intelligent control of large-muscle activities. Recommended background: a course in kinesiology. CE

503-4 Seminar in Physical Education. The course content and its procedures center around group discussions of controversial issues that currently exist in physical education and provide opportunities for practice in seeking unbiased solutions to professional problems. CE

504-4 Problems in Physical Education. Planning, conducting, and reporting original research studies. Prerequisite: 500 or equivalent (C); consent of instructor (E). CE

507-4 Scientific Basis of Athletic Training. Study of the factors which affect maximum human performance in athletic competition. The knowledge and application of scientific principles in preparing the athlete for maximum performance, in shielding him from possibly damaging sequelae, and in restoring him to maximum performance after injury. Consideration of the kinesiological, physiological, and behavioral factors in athletics. Designed to increase the effectiveness of physical education personnel in teaching and coaching athletics. C

508-3 Administration of Interschool Athletics. Existing problems in interschool athletics, with particular attention to secondary school athletic programs. C

509-4 Supervision of Physical Education. The functions of supervision in physical and health education; basic principles and methods of supervision. Techniques and methods for increasing the effectiveness of the program at the elementary and high school levels. C

510-4 (2,2) Motor Development. (a) Early patterns of motor behavior and the development of physical skills in childhood. (b) The development of physical abilities during adolescence. Individual differences in motor proficiency and factors affecting the acquisition of motor skills. Concepts of motor learning with inferences for improving instructional practices. C

511-2 Analysis of Human Physical Movement. Basic human movements as performed by individuals of different ages will be analyzed and understanding of motor development varying levels of skill in sports and dance will be analyzed. C

525-1 to 6 Readings in Physical Education. Supervised reading in selected subjects. Prerequisite: consent of instructor and chairman of department. Open only to last-quarter seniors and graduate students. CE

599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-2 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

PHYSICS

404-3 Introduction to Statistical Mechanics. A brief treatment of the kinetic theory of gases; introduction of phase spaces and ensemble theory. Shows the connection between mechanical and thermodynamic concepts. Obtains a statistical interpretation of thermodynamic processes. Prerequisites: 301, 304 or consent of instructor. CE

405-5 Electronics. The physics of vacuum tubes and semiconductor devices. Elementary theory and application of vacuum tubes as circuit elements in power supplies, oscillators, amplifiers, and shaping circuits. Laboratory. Prerequisites: 305; Mathematics 305a or consent of instructor. C

410-5 Physical Optics. A theoretical and experimental study of light as electromagnetic energy; its production, detection, and measurement. Laboratory. Prerequisites: Mathematics 252b and three advanced physics courses. C

413-8 (4,4) Atomic Physics. A general survey of modern physics including relativity theory, quantum theory, atomic structure and spectra, and wave mechanics. Prerequisites: 301, 305; Mathematics 305a or consent of instructor. C

414-5 Nuclear Physics. Basic properties of nuclei, systematics of nuclear stability, radioactive decay; alpha, beta, and gamma ray spectroscopy, nuclear reactions, models of the nucleus, neutron physics and elementary particles. Prerequisite: 413. C

415-12 (4,4,4) Modern Physics. Elements of wave mechanics, atomic and nuclear physics, fundamental particles, superconductivity, and solid state. Must be taken in a,b,c sequence. Prerequisite: 300; 9 hours of mathematics numbered 300 or above. E

418-1 to 4 Modern Physics Laboratory. E

420-2 to 9 Special Projects. Each student is assigned to a definite investigative topic. Adapted to advanced undergraduate students. Prerequisites: 301, 305. CE

425-5 Electrical Phenomena in Gases. Excitation and ionization of gas atoms; diffusion of ions; space charge; glow and arc discharges. Prerequisite: 305. C

430-2 Physical Literature. A study of source materials in the field of physics. Also library search on special subjects. Prerequisite: integral calculus, three advanced physics courses, and one-year of foreign language. CE

450-5 (C); 450-3 (E) Introduction to Solid-State Physics. A study of the fundamentals of solid-state physics including classification of solids, interatomic and intermolecular forces, lattice energies, specific heats, lattice dynamics, free electron theory of metals, lattice defects, color centers, luminescence, magnetic materials, radiation damage, transport in ionic crystals. Fermi-Dirac statistics, Fermi distribution, and semiconductors. Prerequisites: 305, 413; 304 or consent of instructor. CE

501-15 (5,5,5) (C); 501-15 (3,3,3,3,3) (E) Methods of Theoretical Physics. Classical theoretical physics; devoted about equally to advanced dynamics and electrodynamics including radiation theory. Prerequisites: 301, 305; Mathematics 305. CE

511-12 (4,4,4) Mathematical Methods of Physics. Vector analysis and curvilinear co-ordinate systems, partial differential equations of classical physics, expansions in orthogonal functions, boundary value problems, introduction to complex analysis, contour integration, linear transformations, and matrices, eigenvalue problems, integral equations and transforms, Schrödinger's equation and elementary quantum mechanics. Prerequisites: 413, Mathematics 305 or consent of instructor. C

520-2 to 5 Special Projects. Each student assigned a definite investigative topic requiring resourcefulness and initiative. Prerequisite or corequisite: 501. C

531-9 (3,3,3) Quantum Mechanics. Continuation of development of nonrelativistic quantum theory: wave functions as two-component spinors, identical particles and exchange interactions, Bose and Fermi statistics, atomic structure and fine structure, theory of scattering, motion in an external electromagnetic field, Stark and Zeeman effects. Relativistic quantum theory: Klein-Gordon and Dirac equations, relativistic electron theory, introductory quantum electrodynamics. Prerequisite: 511c. C

555-6 (3,3) Materials Structure Analysis. (a) X-ray diffraction techniques; (b) crystal structure analysis. C

590-1 to 9 Thesis. 1-5 hours each term. Prerequisite or corequisite: 501. Minimum of 5 hours counted toward a master's degree. C

PHYSIOLOGY

410-15 (5,5,5) Advanced Anatomy. Dissection of the human body. Primarily for majors in physiology and other biological sciences. Not a premedical course. 2 hours lecture, 6 hours laboratory. C

414-4 Anatomy and Physiology of Speech and Hearing Mechanisms. The anatomy and physiology of the vocal apparatus. Primarily for majors in speech pathology. 3 hours lecture, 2 hours laboratory. C

415-8 (4,4) Experimental Animal Surgery. Preparation of animals for surgery. Anesthesia, instruments, care of animal quarters, selected exercises. 2 hours lecture, 4 hours laboratory. Part b may be elected independently of a, only by permission of the chairman. C

417-6 (3,3) Principles of Pharmacology. Action of drugs and other chemical substances upon the living organism. Physiological and biochemical events resulting from the action of drugs. Pharmacodynamics, chemo-therapy, toxicology, and therapeutics. Prerequisites: basic courses in chemistry and biological sciences. 2 hours lecture, 2 hours laboratory. C

430-12 (4,4,4) Cellular Physiology. The nature and mechanism of the living cell. Chemical and physical aspects of vital activity. Required for graduate majors in physiology. Recommended for students interested in biochemistry and biophysics. 3 hours lecture, 2 hours laboratory. CE

433-4 Comparative Physiology. Fundamental physiological processes and the manner in which they vary in various groups of animals. Recommended for majors in physiology and for students in other biological science. 2 hours lecture, 2 hours laboratory. CE

440-3 Electron Microscopy. Lectures, demonstrations, and practical experience with the electron microscope. Fundamentals of specimen preparation. Open to students with advanced knowledge of any natural or physical science. 2 hours lecture, 2 hours laboratory. C

450-4 to 16 Special Problems in Physiology. Selected problems in various aspects of physiology. 8 hours laboratory. Open only by permission. C

455-2 Physiological Problems in Rehabilitation. Designed specifically for the rehabilitation counseling program. Problems of the handicapped. 2 hours lecture. C

460-12 (4,4,4) Mammalian Physiology. Function and biochemical organization in mammals, especially man. Open to students with adequate courses in biological sciences and chemistry. (a) blood, circulation, respiration. (b) digestion, excretion, endocrines. (c) nervous system sense organs. 3 hours lecture, 4 hours laboratory. CE

500-1 to 9 Advanced Seminar. One meeting per week, 1 credit per quarter. Formal presentation of research and/or current literature in physiology. Required of all majors each quarter in residence. C

519-3 Experimental Pharmacology. Exercises to familiarize the student with advanced physiological investigation. Prerequisite: strong background in chemistry and the biological sciences. 2 hours lecture, 2 hours laboratory. C

520-12 (4,4,4) Physiological Technics. (a) Analysis of protoplasmic components of tissue extracts under a variety of physiological conditions using chemical and physical procedures. (b) Gas analysis and metabolic methods in physiology. (c) Instrumentation for the recording of the physiologic activity of living tissues and organs. Use of channel recorders. Prerequisite: undergraduate concentration in any of the biological or physical sciences. 2 hours lecture, 4 hours laboratory. C

521-1 to 6 Readings in Current Physiological Literature. Open only by consent. C

550-3 Radiation Biology. Theory and specific applications of isotopes in physiology emphasized, and opportunity given to learn how to handle radioactive materials in the laboratory. 2 hours lecture, 2 hours laboratory. Prerequisites: general physics, biochemistry or equivalent. C

599-3 to 9 Thesis. 9 hours to be counted toward a master's degree. C

600-4 to 36 Doctoral Dissertation. A maximum of 36 hours may be counted for the doctor's degree. C

PLANT INDUSTRIES

401-4 Soil Physics. Physical properties of the soil; factors affecting them, their measurements, evaluation, and their influence in determination of soil productivity. Prerequisite: 103 or 301. C

402-4 Soil Morphology and Classification. Morphology and soil formation, description and identification of soil profiles, classification of soils, techniques of soil mapping, and interpretation of survey data. Field trips cost not more than \$10. Prerequisite: 103 or 301. C

404-3 Turf Management. Principles and methods of establishing and maintaining turf for homes, recreational areas, and public grounds. Study of basic plant and soil materials, fertility, culture, water management, and pest control as related to turf-grasses in variable environments. Field trips cost not more than \$2. Prerequisite: GSA 201b or equivalent. C

406-4 Radioisotopes, Principles and Practices. Lectures on the principles of radioisotope technology as applied to agricultural and biological sciences. Prerequisites: biochemistry, physiology or consent of department. C

407-5 (3,2) Fertilizers and Soil Fertility. (a) Lecture. The uses of fertilizer materials; effects of various fertilizers on soils and crops; fertility maintenance and soil management. Prerequisite: one course in soils. (b) Laboratory. The laboratory study of the chemistry and fertility of soils. Parallels the theoretical presentation given in 407a. Prerequisite: 407a or concurrent enrollment. C

408-4 World Crop Production. Ecological and physiological considerations used in the interpretation of crop research data, with emphasis on modern developments and trends in production and research of major agronomic crops. Prerequisite: 309. C

418-4 Weeds and Their Control. Losses due to weeds, their identification and distribution, methods of weed dissemination and reproduction. Mechanical, biological, and chemical control of weeds. "Bioactivity of herbicides." State and federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field trips. Prerequisite: GSA 201b. C

419-4 Forage Crop Management. Forage production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation, and land use. Prerequisite: GSA 201b. C

424-5 (3,2) Soil Microbiology. (a) (Lecture). (Same as Microbiology 424.) A study of the numbers, characteristics, and biochemical activities of soil microorganisms, with particular consideration of their role in the transformations of organic matter, nitrogen, and minerals as related to soil fertility and management. Prerequisite: one course in microbiology or soils. (b) (Laboratory). Experiments designed to determine numbers, and to study the characteristics and biochemical activities of the soil microflora as related to fertility. Prerequisites: 424a, or concurrent enrollment, Microbiology 301. C

438-3 Advanced Vegetable Crops. Studies of the genetic, morphological, and physiological factors influencing the production of vegetable crops. Prerequisite: GSA 201b or equivalent. C

440-3 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Prerequisites: 264, GSA 201b, or consent of department. C

456c-2 Agricultural Marketing Problems and Practices—Field Crops. (See Agricultural Industries 456c.) C

456e-2 Agricultural Marketing Problems and Practices—Horticultural Crops. (See Agricultural Industries 456e.) C

506-2 Laboratory Methods for Radioisotopes. Laboratory exercises giving the students experience in instrumentation, measurements, and the safe handling of isotopic materials. Prerequisite: 406 or consent of department. C

507-3 Advanced Soil Fertility. Theoretical principles of soil fertility; evaluation of research data and methods used in soil fertility research. Prerequisite: 407a. C

520-1 to 6 Readings. Contemporary books and periodicals on selected subjects

- within the fields of plant industries. Prerequisite: consent of department. C
- 575-1 to 6 Research.** Directed research on approved projects investigating selected fields of the plant industries. Prerequisite: consent of department. C
- 581-1 to 6 Seminar.** Group discussions of and individual papers on subjects and problems relating to soils, field and horticultural crops, and other phases of the fields of the plant industries. Prerequisite: consent of department. C
- 599-2 to 9 Thesis.** Minimum of 5 hours to be counted toward a master's degree. Prerequisite: consent of department. C

PSYCHOLOGY

- 404-4 Theories of Perception.** An examination of the different theories concerned with an organism's sensory contact with his environment. Physiological, social, and organizational theories of perception will be considered. Prerequisite: 211b or consent of instructor. C
- 406-4 Learning Processes.** Processes by which individual behavior is changed, using procedures developed in the learning laboratory. Introduction to major concepts and data of learning. Prerequisite: consent of instructor. C
- 407-4 Theories of Learning.** A consideration of the major contemporary learning theories and their relation to experimental data. Prerequisite: 211b or consent of instructor. CE
- 408-4 Theories of Motivation.** An examination of instinct theories, biological drives, emotions, social motives, and psychodynamic theories as they contribute to a comprehensive psychology of motivation. Prerequisite: 211b or consent of instructor. C
- 409-4 History and Systems.** Study of the important antecedents of contemporary scientific psychology. Considers issues, conceptual developments, and research advances, and presents the major schools and systems. Prerequisite: signed consent of psychology adviser. CE
- 420-4 Scientific Methodology in Psychology.** Scientific methodology as an approach to investigation and classification of problems involved in understanding the psychological nature of man. Prerequisite: consent of instructor. C
- 421-4 Psychological Tests and Measurements.** Principles of psychological measurement, including errors of measurement, techniques for estimating reliability and validity, techniques of test construction, and problems in assessment and prediction. The laboratory will include the use of selected instruments. Lecture and laboratory. Prerequisite: 8 hours of psychology. CE
- 424-4 Psychophysical Methods.** Survey of the major psychophysical methods, and their applications. Lecture and laboratory. C
- 431-4 Psychopathology.** Classification, description, etiology and treatment of the disorders of personality organization and behavioral integration. Observations in a state mental hospital setting. Prerequisite: 305 or consent of instructor. CE
- 432-4 Mental Hygiene.** An integration of psychological knowledge and principles concerning factors and conditions affecting the individual which tend to facilitate or deter mental health. Prerequisite: 305 or consent of instructor. CE
- 437-3 Fundamentals of Counseling.** Introduction to the common assumptions, dimensions, and communicative skills underlying psychological counseling. Prerequisite: 305 or consent of instructor. E
- 440-4 Theories of Personality.** A review and critical evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor. CE
- 451-4 Advanced Child Psychology.** An examination of the concepts, methods, and problems of human development with consideration of both its psychological and psychosocial aspects. Prerequisite: 301 or 303 or consent of instructor. C
- 461-4 Advanced Social Psychology.** Examines current areas of interest in the study of social behavior: language behavior, communication, social influence, attitude change, interpersonal perception, etc. Emphasis is on the individual in the social context. Prerequisite: 307 or consent of instructor. C
- 465-4 Group Dynamics and Individual Behavior (C); 465-4 Group Dynamics (E).** Examination of research and theory in the area of small-group interaction. Examines

such topics as group structure and function, group problem-solving, leadership, etc. Prerequisite: 307 or consent of instructor. C

471-4 Work Methods and Measurement. A study of the analysis and evaluation of jobs and the measurement of work performances by the use of standard time tables. Prerequisite: 320 or consent of instructor. C

479-4 Psychology of Industrial Conflict. Consideration of social and psychological factors underlying controversies between workers and management. Prerequisite: 320 or consent of instructor. E

490-1 to 16 Independent Projects. Independent readings and projects in psychology. Prerequisite: consent of instructor and chairman. C

495-1 to 18 Seminar: Selected Topics. Varied content. To be offered from time to time as need exists and as faculty interest and time permit. Prerequisite: consent of department. C

501-12 (4,4,4) Proseminar in General Psychology. Basic conceptual and methodological problems in the study of behavior. (a) History and systems of psychology, philosophy of science, scientific methodology, behavior theory. (b) Acquisition of behavior, sensory and perceptual processes, motivation and emotion. (c) Personality and individual differences, new conceptual and methodological developments and trends. To be taken in sequence. Prerequisite: consent of instructor. Open to students in other areas by arrangement with chairman. C

509-4 Instrumentation in Behavioral Science. Study of methods of research instrumentation. Techniques of stimulation and of physiological and psychological response recording. Lecture and laboratory. Prerequisite: consent of instructor. C

512-4 Sensory Processes. A study of the structure and functions of the sense organs. Emphasis will be placed on the psychological data which describe the function of these organs. Lecture and laboratory. Prerequisite: consent of instructor. C

514-8 (4,4) Physiological Psychology. Study of neural and endocrine mechanisms underlying behavioral processes. Lecture and laboratory. Prerequisite: consent of instructor. C

520-4 Research Design and Inference I. C

521-4 Research Design and Inference II. C

522-4 Research Design and Inference III. The design and analysis of psychological experiments. Analysis of variance in complex designs, analysis of covariance, and trend analysis. Prerequisite: Mathematics 411 (or Mathematics 410B). C

523-2 Research Seminar. Major methods of obtaining data, use of computational and laboratory equipment, planning of research projects. Every student will be expected to submit a detailed research prospectus for group criticism. Prerequisite: 522. C

524-4 Advanced Research Methodology. A detailed coverage of psychometric methods, with special emphasis on the theory and applications of multivariate regression analysis. Includes an introduction to factor analysis. Prerequisite: 522. C

525-4 Mental Test Theory. Derivation of the basic psychometric equations, effects of test length and group heterogeneity on test parameters, criteria of parallel tests, weighting and differential prediction. Prerequisite: 524. C

530-4 Personality Theory and Dynamics. Intensive treatment and critical analysis of several representative approaches to personality. Consideration also of important personality concepts common to most theoretical approaches. Prerequisite: consent of instructor. C

531-2 to 4 Advanced Psychopathology. Consideration of special topics, including psychological theories of the nature and etiology of human pathology, assessment of pathology, and institutional care and treatment. Includes extensive field experience in a mental hospital setting. Prerequisite: 530, 541, 541b, and consent of instructor. C

532-2 Experimental Approaches to Personality. Presentation of conceptual formulations and research data from representative experimental approaches to personality. Critical evaluation of methodological approaches to personality study. Prerequisite: 530 or consent of instructor. C

533-3 Experimental Approaches to Psychopathology. An examination of the research literature on several issues in clinical psychopathology. Prerequisite: consent of instructor. C

536-4 Fundamentals of Counseling. Introduction to the common assumptions, dimensions, and communicative skills underlying psychological counseling. Observation utilized to supplement didactic discussion. Lecture and demonstration. Prerequisite: consent of instructor. C

537-4 Counseling and Psychotherapy. Systematic presentation of major approaches to counseling and psychotherapy. Consideration of salient aspects of the therapeutic situation and of the process and nature of changes during psychotherapy. Critical evaluation of both theory and practice. Consideration of research findings and problems. Prerequisite: 530 and consent of instructor. C

538-2 Group Psychotherapy. Presentation of major approaches to group psychotherapy. Prerequisite: 537 and consent of instructor. C

541-6 (4,2) Psychodiagnostics I. Introduction to clinical psychology with attention to the function and clinical use of individual intelligence tests. Theories of intelligence and related research. (a) age scales with emphasis on infant and child testing. (b) point scales and tests of deterioration with emphasis on child and adult testing. Lecture and practicum. Prerequisite: Mathematics 410 and consent of instructor. C

543-6 (4,2) Psychodiagnostics II. Basic theory and assumptions underlying projective methods. Use of projective techniques as measures of personality and as tools for clinical diagnosis and research. (a) thematic projective techniques. (b) Rorschach and Bender-Gestalt. Lecture and practicum. Prerequisite: 541b or consent of instructor. C

545-2 Psychodiagnostics III. Nature and theory of questionnaires for personality assessment and psychodiagnostics. Consideration of their use in clinical research. Lecture and practicum. Prerequisite: consent of instructor. C

546-3 to 4 Psychodiagnostics for Special Populations. Tests used in diagnostics and measurement of special populations such as retarded, blind, deaf, brain injured, and the like. Lecture and laboratory. (Same as Special Education 573.) Prerequisite: consent of instructor. C

547-2 Assessment Procedures in Counseling. Use and integration of psychological test data, vocational, socio-economic, and educational information in assessment and counseling. Prerequisite: 421 or consent of instructor. C

552-4 Experimental Child Psychology. Consideration of relationship of methodology to child theory, typical methodological procedures and problems specific to children, and representative research topics. Prerequisite: 451 or consent of instructor. C

554-2 Developmental Theory. Systematic study and critical evaluation of representative theories of child behavior. Prerequisite: 451 or consent of instructor. C

556-2 Psychological Treatment of the Child. Investigation of personality and behavior problems. Etiological factors and methods of treatment. Prerequisite: 451 or consent of instructor. C

561-4 Social Influence Processes. Critical review of theoretical and empirical developments in the study of influence processes, attitude change, etc. Social and intra-personal determinants are examined. Prerequisite: 461 or consent of instructor. C

562-4 Observational Techniques and Content Analysis. Examination and evaluation of research methods and measurement techniques utilized in social psychology. Prerequisite: 461 or consent of instructor. C

564-4 Communication and Group Behavior. Emphasis in this course is on language behavior and the psychological study of the communication process. Examines theories, methods and research in these areas. Prerequisite: 471 or consent of instructor. C

571-4 Industrial Motivation and Morale. A review of the factors which determine motivation and morale as well as their measurement and evaluation. Prerequisite: 320 or consent of instructor. C

572-4 Industrial Training. A systematic consideration of the methods of industrial training and development on the production, supervision, and decision-making levels. Prerequisite: 320 or consent of chairman. C

573-2 Selection and Placement. (a) Selection and validation of test batteries, use of the interview and personal history data in selection, quota, and classification problems, administration of a selection program. (b) Methods of evaluating employees' proficiency and criterion development. Also, a brief introduction to scaling proce-

- dures. Must be taken in a,b sequence. Prerequisite: 524 or consent of instructor. C
- 574-2 Psychology of Industrial Relations.** Analysis of psychological factors involved in industrial organization, employer-employee relations, and union-management relations. Prerequisite: 571 or consent of instructor. C
- 576-2 to 4 Human Engineering.** Analysis of man-machine systems, human factors in the design of display and control systems, limitations and capabilities of the human operator. Prerequisite: consent of department. C
- 590-1 to 16 Readings in Psychology.** Readings in selected topics in psychology under staff supervision. Prerequisite: consent of department. C
- 591-1 to 36 Research in Psychology.** Research under staff supervision in selected areas of psychology. Prerequisite: consent of the department. C
- 593-1 to 18 Practicum in Psychology.** Practicum experience in a professional setting is offered under staff supervision in the following areas: (e) Clinical Psychology, (f) Counseling Psychology, (h) Industrial Psychology, (j) Child Psychology, (k) Community Health Psychology, (l) Teaching of Psychology, (m) Rehabilitation Counseling. C
- 595-1 to 18 Advanced Seminar.** Seminars of varied content for advanced students. Prerequisite: consent of department. C
- 598-2 Ethical and Professional Problems in Psychology.** Problems in the professional practice of psychology and in teaching and research. Professional ethics, relations to other professions and the public, organization and structure of the field, current trends. Prerequisite: major in psychology or consent of instructor. C
- 599-1 to 9 Thesis.** C
- 600-1 to 36 Dissertation.** C

RECREATION AND OUTDOOR EDUCATION

- 413-4 Safe and Healthful Living Outdoors.** Areas to be included are foods, sanitation, survival, plants and animals, natural hazards, emergency care, water, riflery, and others. Prerequisites: 334, and at least 10 hours of biological sciences. C
- 425-4 Construction and Maintenance of Recreation Areas.** Principles of planning, construction, management and maintenance of shelters, utilities, sanitation, structures, erosion control, and other related problems. C
- 450-4 Principles and Interpretations of Recreation.** Principles of recreation in relation to education and everyday life. Basic concepts underlying the interpretation of recreation and leisure in the light of economic, psychological, political, and social conditions. C
- 470-4 Recreation in Public Education.** Emphasis on current practices and trends in curriculum content, adult education, extracurricular activities, after-school and vacation programs, and co-operative programs with other agencies. C
- 480-4 Techniques in Camping.** Preparation of material for use in camps; techniques of camp procedure, camp craft, woodmanship, and crafts. C
- 510-2 to 6 School Camping and Outdoor Education Workshop.** Current practices in school camps; the training of leaders for school camps and the place of outdoor education in the school program. C
- 520-4 Recreation Program Workshop.** Bases for planning community programs of recreation. Scope of leisure opportunities; selection, evaluation, and adaptation of activities. C
- 530-4 Organization for Community Recreation.** The development and administration of a recreation program. A study of community recreation, including developing facilities and co-ordinating community agencies. C
- 540-4 Recreation Surveys and Planning of Facilities.** An analysis of scope, content, objectives, procedures, and types of recreational surveys and appraisals. Collection and analysis of data. C
- 550-2 to 6 Field Problems in Community Recreation.** Internship in school recreation and outdoor education with emphasis on administrative problems. C
- 560-2 to 6 Field Problems.** Internship in school recreation and outdoor education with emphasis on administrative problems. C

SECONDARY EDUCATION

402-4 Aerospace Education Workshop. Teachers learn about current developments in this area and how to incorporate aerospace information into existing curricula. They study in some detail the social, political, and economic consequences of this era. Prerequisite: consent of instructor. C

407-4 The Junior High School. The place of the junior high school in the organizational pattern, with major emphasis upon the areas of organization, administration, and curriculum. CE

440-3 Teaching Reading in High School. A foundation course in how to teach reading in junior and senior high school: developmental and corrective reading programs; appraisal of reading abilities; methods and materials of instruction. Prerequisite: Guidance 305. C

450-4 to 16 Field Training in Community Development Methods. C

487-4 Teaching the Natural Sciences in Secondary Schools. Objectives of science education; instruction methods and techniques appropriate for teaching science; desirable equipment, audio-visual aids, and instructional material; development of a course outline and at least one instruction unit. Prerequisite: 315 or consent of instructor. E

488-3 Teaching Social Studies in Secondary Schools. Deals with objectives, scope and sequence of curriculum, methods of teaching different courses and age groups, materials and evaluation. Prerequisite: Guidance 305. CE

490-4 Workshop in Economics Education. (Same as Economics 490.) Designed to assist elementary and secondary school teachers in promoting economic understanding through the translation of economic principles and problems into classroom teaching materials. CE

505-4 Improvement of Reading Instruction. (See Elementary Education.) CE

507-2 to 4 Readings in Reading. CE

508-4 Seminar: Trends in Selected Areas in Secondary Schools. For students in advanced graduate work. Individual class members will read basic bibliography related to secondary education and read widely about trends in the area of their own teaching fields. Prerequisites: completion of half or more of the work leading to a master's degree and consent of the instructor. CE

509-4 to 8 Practicum in Reading. (See Elementary Education.) C

510-4 Seminar: Problems in Reading. (See Elementary Education.) C

514-4 Organization and Administration of Reading Programs. (See Elementary Education.) C

516-4 Internship in Reading. (See Elementary Education.) C

518-2 Supervision of Student Teachers. CE

521-9 (3,3,3) (C); 521-3 to 4 (E) Diagnosis and Correction of Reading Disabilities. (See Elementary Education.) CE

544-9 NDEA Summer Institute for Teachers of German. (See Foreign Languages.) C

550-4 Core Curriculum in the Secondary School. Designed to help students gain a functional understanding of the core concept. Techniques of selecting materials and the co-operative planning of units of work. Critical study of current practices in this field. Prerequisite: Educational Administration and Supervision 460. CE

560-1 to 8 New Developments in Technological Education. (See Industrial Education.) C

562-4 Workshop in High School Curriculum. Designed to permit students to work in groups on problems related to the high school curriculum. Such problems should originate in the schools where the students are or will be employed. The point of view maintained is that procedures should be very democratic. The instructor serves as a co-ordinator of activity; resource people are used freely. Prerequisite: one other graduate course in curriculum. CE

564-4 High School Principalship. Designed to deal with problems met specifically by the high school principal. Emphasizes his role in relation to guidance, curriculum,

schedule-making, extracurricular activities, public relations, budgeting of time, etc. Prerequisite: Educational Administration and Supervision 424 and consent of instructor. CE

570-4 Extra-Class Activities. E

575-2 to 4 Individual Research. The selection, investigation, and writing of a research topic, under the personal supervision of a member of the departmental graduate staff, in one of the following areas: (a) Curriculum, (b) Supervision, (c) Language Arts, (d) Science, (e) Reading, (f) Social Studies, (g) Problems in Secondary Education, (h) Problems in Higher Education, (j) Problems in Junior College. CE

586-3 The Change Agent in Planned Change. An intensive diagnosis of the dynamics involved in planned change in a social system—using actual situations for study—and the consultant's relationship to this process. Prerequisite: Sociology 333 or consent of instructor. C

589-2 Seminar in Community Development. C

591-4 Workshop in Current Problems in Secondary Education. Designed primarily to help high school principals to work effectively and with the help of resource leadership on the most urgent problems confronting their schools. Discussion, reports, lectures, and final examination. Prerequisite: consent of instructor. CE

596-5 to 9 Independent Investigation. A field study required of each student working for the sixth-year professional certificate. The work should be done in the setting of a school system where the student is employed or where full co-operation is extended. The study will involve selecting of the problem, survey of pertinent literature, recording of results, and appropriate interpretations and summarizations. C

597-1 to 3, 598-1 to 3, 599-1 to 3 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-1 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

SECRETARIAL AND BUSINESS EDUCATION

403-3 Teaching Typewriting. The programming of activities in typewriting training, methods of instruction, skill-building principles and techniques, selection and preparation of practice materials, standards of achievement, and evaluation of pupil performance. Prerequisite: 201c or equivalent. CE

404-3 Teaching Shorthand and Transcription. The programming of activities in shorthand and transcription training, methods of instruction, skill-building principles and techniques, selection and preparation of practice and homework materials, standards of achievement, and evaluation of pupil performance. Prerequisite: 324a or equivalent. CE

405-3 Teaching General Business Subjects (C); 405-4 Teaching Basic Business Subjects (E). Instructional methods and materials for, and the evaluation of pupil progress in, such basic business subjects as general business, consumer education, economic geography, business law. CE

406-4 Teaching Office Practice and Office Machines. Instructional methods and materials for, and the evaluation of pupil performance in, office practice and office machines. CE

407-4 Office Management. The principles of management as applied to office problems. Emphasis on the role of the office in business management; office organization; physical facilities of the office; office services, procedures, standards, and controls; records management. CE

408-3 Teaching Bookkeeping and Accounting. Instructional methods and materials for, and the evaluation of pupil progress in, bookkeeping and accounting. Prerequisite: Accounting 251b or equivalent (C); none (E). CE

427-4 Records Administration. The requisites for records administration. The value of files, their creation, control, retention, and disposition. Applications to such records as medical, legal, educational. Prerequisite: 407. E

428-4 Systems and Procedures. A problems approach to the office systems-procedures function in the modern business firm; seminar and laboratory work on improvement

of systems and procedures, administrative information and paperwork engineering; theory of office-systems design; systems administration and work simplification. Prerequisite: 407 or consent of instructor. E

500-2 to 5 Readings in Business Education. Supervised readings in selected subjects. Prerequisite: consent of instructor (E). CE

501-2 to 5 Individual Research in Business Education. Selection and investigation of a problem; use of relevant sources and techniques; collection, evaluation, and interpretation of data; and the writing of a report on the investigation. Prerequisite: consent of instructor (E). CE

502-4 Research in Business Education. A study of research findings and techniques as exhibited in representative investigations in business education. Emphasis on reading and interpreting research, using research findings in solving instructional problems, and uncovering potential topics for future research. Prerequisite: Guidance 422b (E). CE

503-4 Tests and Measurements in Business Education. (See Guidance 503.) CE

504-4 Psychological Bases for Teaching Secretarial Skills. Findings of experimental research in human learning applicable to the learning of shorthand, typewriting, and other office skills. Treats the variables in skill-learning and modes of manipulating these variables for specific purposes; applies principles of learning to the evaluation and derivation of instructional procedures. Prerequisites: 403 or 404. C

505-1 to 6 Workshop in Business Education. Major issues in business teacher education. Ordinarily offered during one or two weeks of the summer session. CE

506-4 Principles and Problems of Business Education. A study of the fundamentals of business education; its relation to business, to general and vocational education, and to guidance programs; its history, current status, and trends; special emphasis on objectives and curriculum problems. CE

507-4 Application and Fundamentals of Data Processing in Business Education. Acquaints business teachers with data processing applications in high school business classes. Emphasis on vocabulary development, unit record equipment, concepts of programming and fundamentals of computer applications. Approximately one-third of the course will be spent in machine operation. E

599-1 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

SOCIOLOGY

General Sociology: 400-2, 405-4, 407-4, 427-4, 450-4, 451-4, 501-4, 502-4, 503-4, 504-4, 505-4, 506-4.

Social Organization and Structure: 406-3, 435-4, 438-3, 449-4, 534-4, 537-4, 538-4, 539-4, 542-4, 543-4, 544-4, 545-4.

Social Psychology: 424-4, 426-4, 453-4, 521-4.

Social Disorganization and Control: 472-4, 561-4, 562-4, 563-4, 564-4, 566-4, 572-3.

Methodology: 412-5, 415-3, 519-4, 526-4, 527-4, 528-4, 529-4, 530-4, 531-4.

General Courses: 591-2 to 6, 596-2 to 6, 599-2 to 9, 600-36 to 48.

Social Work: 481-4, 482-3, 480-2, 484-3, 486-1 to 5, 487-4, 488-3, 586-3, 587-2 to 8.

Corrections: 483-2, 489A-3, 489B-4, 489D-3, 489E-2 to 4, 582-4, 583-4 to 12, 584-4.

400-2 Current Sociology. Students read, report on, and evaluate content of leading sociological journals. Prerequisite: 8 hours of sociology. C

405-4 Current Sociology. A survey of important trends in contemporary social thought. Students read, report on, and evaluate content of leading sociological journals. Prerequisite: 12 hours of sociology. E

406-3 (C); 406-4 (E) Social Change. Processes of social change in the modern world; culture lag and conflict of norms; individual and social problems arising from conflicting systems of social values and cultural norms. Prerequisite: 8 hours of sociology. CE

407-4 Integrated Sociology. Integration of sociological concepts and principles:

society and culture, the human group, social norms and patterns, status and role, organization, structure, and function, social change. Prerequisite: 15 hours of sociology. CE

412-5 Sociological Research. Introduction to methods of sociological research. Relations between theory and research design. Application of scientific methods to social data. Prerequisite: 12 hours of sociology or consent of instructor. C

415-3 Logic of the Social Sciences. (See Philosophy 415.) C

424-4 Collective Behavior. The behavior of people in large groups; collective inter-stimulation and emotions; crowds, audiences, and publics; mass stimuli and mass response. Prerequisite: 321 or 322, or consent of instructor. CE

426-4 Social Factors in Behavior and Personality. How group situations and values affect behavior and shape personality; development of concepts, role-concepts, attitudes, values; theories of motivation; self-concepts; conflicting social values in relation to individual motivation. Prerequisite: 321 or Psychology 305. CE

427-4 Personality and Social Adjustment. Basic mechanisms of adjustive behavior; concepts and criteria of personal integration and social adjustment; varieties of adjustive and non-adjustive behavior; theories of personal organization and disorganization; selected problems. Prerequisite: 321 or Psychology 305 or consent of instructor. CE

435-4 Social Stratification. A comparative study of social class systems, with emphasis on the American systems. Relationships of class position to behavior in family, religion, politics, etc. Prerequisite: GSB 201b. CE

438-3 Sociology of Occupations and Professions. Natural history and institutional aspects of occupations in our society, cultural context of occupations in both primitive and modern society, preparation for jobs, human values in work, promotion and discharge, mobility, retirement. Prerequisite: GSB 201b. C

449-4 Sociology of Aging. The social implications of an aging population; social adjustments to the aging process; personal adjustments to the roles and statuses of later maturity; a consideration of retirement and public assistance programs for older people. Prerequisite: GSB 201b or consent of instructor. C

450-4 Social Thought I: Before 1800. The ideological basis of Western society. The classical foundations. Trends of thought from the Renaissance to the Enlightenment. Prerequisite: background in history. CE

451-4 Social Thought II: The Sociological Movement. From Romanticism to Realism; rise and development of scientific social thought. Prerequisite: background in 19th century history or literature. CE

453-4 Social Movements. A sociological study of modern social movements; social and cultural backgrounds, forms of expression and organization; social structure of social movements, their role and function in modern society. Prerequisite: 8 hours of sociology. CE

470c-4 Urban Planning. (See Government 470.) E

471-4 Principles of Demography. Techniques in analyzing and evaluating data on human population; composition, birth and death rates, life tables, migration data, estimates of future trend. Practical uses of demographic techniques. Prerequisites: 371, 412. C

472-4 Treatment and Prevention of Crime. Principles of penology; history of punishment and prisons; criminal law, police function, criminal courts; the prison community; the juvenile court and related movements. Prerequisite: 372. CE

480-2 History and Legal Aspects of Rehabilitation. A survey of historical and legal developments in rehabilitation agencies, with particular emphasis on current theories and trends. Open only to students in the Rehabilitation Institute. C

481-4 Processes in Social Work. Theory, rationale, and practice of casework, group work, social welfare organization, and the roles of supervision, administration, and research in relation to each. Case material study and discussion with field observation and practice. Prerequisite: 380 or consent of instructor. CE

482-3 (C); 482-4 (E) Social Work in Selected Agencies. Study of representative literature on casework in family, psychiatric, medical, school, military, child welfare, and correctional settings, and others. Case material study and discussion with field observation and practice. Prerequisite: 481. CE

483-3 Current Problems in Corrections. An exploration of contemporary problems in the control and treatment of sentenced offenders. Prerequisite: consent of instructor. CE

484-3 (C); 484-4 (E) Survey Course in Marriage Counseling. Survey and analysis of the field of marriage counseling; assessment of current practices and techniques in terms of contemporary sociological theory. Prerequisites: GSB 341, and consent of instructor. CE

485-6 Community Programs for the Prevention of Juvenile Delinquency. Analysis of delinquency prevention in community programs administered by the public schools, social welfare, governmental agencies. A study of the categories of juvenile delinquency is applied to a critique of existing programs and to the development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: consent of instructor. E

486-1 to 5. Independent Study in Community Development. Individual study and projects designed to fit the needs of each student. Prerequisite: consent of instructor. C

487-7 (4,3) Community Development. (a) The concepts of community development and analysis of the social-psychological forces and processes involved in citizen study, planning and action directed toward the fuller development of communities in a democratic society. (b) Principles and procedures applicable to solving social problems in the context of a community development program. Laboratory period for field trips. Must be taken in a,b sequence. Prerequisite: 4 hours of sociology or equivalent. C

489A-3 The American Correctional System. A survey of the Correctional field covering probation, institutions, and parole; their historical development, organizational structure, program content, and current problems. CE

489B-4 Probation, Classification, and Parole. An introduction to the structure and function of those elements of the correctional process primarily concerned with the evaluation, treatment, and control of offenders with particular attention to the case-work components of the process. Prerequisite: 481 or consent of instructor. CE

489D-3 Problems in Correctional Research. The problems of designing and conducting research in correctional institutions and agencies, a review of research trends in corrections. Prerequisite: 483 or consent of instructor. C

489E-2 to 4 Independent Study in Corrections. Supervised readings or independent investigative projects in the various correctional aspects of crime control, institutional management, and specific correctional programs. Prerequisite: consent of instructor. C

501-4 Survey of Sociological Theory. The development of sociology as a science of society, from synthetic philosophy to analytic sociology. Prerequisite: 451 or consent of instructor. C

502-4 Seminar in European Sociological Theory: 1800-1910. The theoretical systems of selected European sociologists studied from the original writings. Prerequisite: 15 hours of sociology or consent of instructor. C

503-4 Seminar in European Sociological Theory: 1910 to the Present. A Continuation of 502. Prerequisite: 15 hours of sociology or consent of instructor. C

504-4 Seminar in American Sociology I: Foundations. Review of backgrounds and development of American sociology to World War I. Special attention to theory. Prerequisite: 15 hours of sociology or consent of instructor. C

505-4 Seminar in American Sociology II: The 2nd Generation. Development of American sociology, 1914-1942. Proliferation as an academic discipline and progress toward standardization of concepts and areas of investigation; discovery of culture and abandonment of instinctivism; neopositivism and the false antithesis between theory and research. Prerequisite: 15 hours of sociology or consent of instructor. C

506-4 Seminar in Contemporary Sociological Theory. An analysis of recent sociological theories, including a survey of current approaches to the construction and application of systematic theoretical models. Special attention will be given to "structural-

functional" analysis and to the theoretical adequacy of selected theory-oriented empirical research areas. Prerequisite: 15 hours of sociology or consent of instructor. C

519-4 Methodological Foundations of the Social Sciences. Social science methodology; the nature of social facts and phenomena, the formation of concepts, the application of logic in the social sciences. Prerequisites: 407, and Philosophy 420 or consent of instructor. C

521-4 Seminar in Social Psychology. Survey of theoretical systems; progress toward integrated body of behavioral theory. Prerequisite: 426. C

526-4 Quantitative Methods in Sociology I. Consideration of the nature and organization of empirical data, correlation and regression in the two variable cases, tests of significance, and general character of statistical inference. Prerequisite: 412 or consent of instructor. C

527-4 Quantitative Methods in Sociology II. Review of nonparametric techniques. An examination of the Hyman Method of multivariate analysis. Emphasis is given to statistical significance of partials. Prerequisite: 526 or consent of instructor. C

528-4 Quantitative Methods in Sociology III. Classical techniques of multivariate analysis. Simple analysis of variance, complex analysis of variance, partial correlation, and multiple regression equations. Prerequisite: 527 or equivalent. C

529-4 Sociological Measurement. A detailed coverage of techniques by means of which responses to questionnaire and interview as well as direct observation of behavior may be quantified. Includes the Parrallogram Technique, Unfolding Technique, methods based on the Law of Comparative Judgment and the Method of Single Stimuli. The validity, reliability, and equivalence of these techniques are also covered. Prerequisite: 412 or consent of instructor. C

530-4 Research Design. Types of research design. Formulation of a research problem. Ecological research methods. Case studies, types of experimental designs. Management of research projects. Types of sampling. Prerequisite: 527 or equivalent. C

531-4 Research Analysis. Content analysis. Classification, editing, coding, tabulation, and graphing. Analysis of descriptive research. Analysis of explanatory research. Errors and bias in research. Presentation of research findings. Prerequisite: 530 or consent of instructor. C

533-4 Ecology of Human Communities. Spatial and temporal organization of population and institutions with special reference to the organization of rural and metropolitan communities. Emphasis on basic research methods and current sources of data in respect to type, structure, and growth of the communities. Prerequisite: 15 hours of sociology or consent of instructor. C

534-4 Seminar in Intergroup Relations. Cross-cultural study of inter-ethnic and inter-faith relations, with special attention to conflict, accommodation, acculturation and assimilation. Prerequisite: 15 hours of sociology or consent of instructor. C

535-4 Race and Education in American Society. An examination of the role of racial differences and racial relationships in the development of education philosophies and systems in the U.S. Both historical and sociological approaches are employed in assessment of social change and evaluation of educational institutions. Special attention given to changes during last half-century; contemporary race relations issues in public education are critically examined. C

537-4 Sociology of Law. An analysis of the role of law in society. Special emphasis will be given to the relationships between law and social organization, social control, social value systems and social change; consideration will be given to research in the field. Prerequisite: 15 hours of sociology or consent of instructor. C

538-4 Seminar in Industrial Sociology. Selected aspects of Industrial Organization and related problems including such topics as: functional and dysfunctional deviations from ideal bureaucracy, promotion policies, labor relations, job aptitudes, job satisfactions, and public relations. Prerequisite: 15 hours of sociology or consent of instructor. C

539-4 Sociology of Bureaucracy. Analysis of the structural characteristics and conditions for the emergence of bureaucratic and quasi-bureaucratic forms of organization. Attention to such problems as the bases of authority, stabilizing mechanisms, systems of formal and informal relations, rationality and paradox in bureaucratic

organization; impact of bureaucratic organization upon character structure and its role in the formation of classes and elites. Prerequisite: 15 hours of sociology or consent of instructor. C

542-4 Seminar on the Family. The family as a field of sociological study. Assessment of significant historical and contemporary writing. Prerequisite: 15 hours of sociology including 340, or consent of instructor. CE

543-4 Seminar in Family Variability. An analysis of the structure, organization and function of the family in several contemporary and primitive societies. Prerequisite: 15 hours of sociology including 340, or consent of instructor. C

544-4 Seminar in Family Research. A detailed analysis of significant research in the field of the family. Special attention to methods employed as they relate to the specific problems investigated. Prerequisite: 15 hours of sociology including 340, or consent of instructor. C

545-4 The Family and Social Change. The significant social factors responsible for changes in the family from ancient times to present. Analysis of representative writings from several periods. Prerequisite: 15 hours of sociology including 340, or consent of instructor. C

561-4 Alcohol and Society. Analysis of the determinants of ranges of variation in drinking patterns, normal or pathological, viewed cross-culturally and in the context of complex society. Special consideration will be given to the following: the ecology of drinking and alcoholism, drinking patterns and social structure, drinking centered subcultures and institutions, as well as to the genesis and patterning of deviant drinking (alcoholism), responsive movements and systems of control. Prerequisite: consent of instructor. C

562-4 Deviance and Disorganization. Comparative study of the role of social, cultural, and psychological factors in the genesis of specific social pathologies exhibiting marked variation in group rates. Pathologies such as suicide, homicide, and alcoholism will be taken as illustrative. The strategic significance of the study of such phenomena for theories of social and personal disorganization, will be considered in detail. Prerequisite: 15 hours of sociology or consent of instructor. C

563-4 Research Problems in Deviance and Disorganization. For students who are concerned to develop viable research projects in the areas of social disorganization and deviant behavior. Students formulate and present original research prospectuses for critical evaluation. Consideration given to questions of theoretical relevance, research design, and appropriate techniques. Prerequisite: 15 hours of sociology or consent of instructor. C

564-4 Social Factors in Mental Disorders. An examination of the role of social organization and structure in the emergence of mental disorders. Consideration given to pertinent theoretical and research contributions. Prerequisite: 15 hours of sociology or consent of instructor. C

566-4 Community Organization and Disorganization. Nature of the community and community generating processes. Appraisal of consensus and allocation of power. Illustrative community case studies. C

572-3 Seminar in Criminology. Critical study of important research through book reviews and theoretical analyses. Prerequisite: 372 or consent of instructor. C

582-4 Criminal Law and the Correctional Process. A review of the basic principles and administration of the criminal law and the legal foundations of the juvenile court, the sentencing process, parole and probation, and the changing concept of mental competency. C

583-4 to 12 Supervised Field Work in Corrections. Experience in state and federal institutions, probation and parole departments, juvenile courts, delinquency control programs, and public or voluntary agencies. Students registering will be required to attend orientation sessions prior to actual placement; enrollment should be discussed considerably in advance of experience to facilitate arrangements with agencies. Prerequisite: consent of instructor. C

584-4 Seminar in Correctional Program Management. A critical analysis of management influence on treatment programs in various correctional settings. Field trips, observation, and research in addition to readings. C

- 586-3 The Change Agent in Planned Change.** (Same as Secondary Education 586.) An intensive diagnosis of the dynamics involved in planned change in a social system—using actual situations for study—and the consultant's relationship to this process. Prerequisite: 333 or consent of instructor. C
- 587-2 to 8 Individual Research in Community Development.** Research projects designed to meet the professional objectives of the individual student. Prerequisite: concentration in community development. C
- 591-2 to 6 Individual Research.** Supervised research projects. Open only to graduate students with a major in sociology. Prerequisite: consent of instructor and chairman of department. Credit according to achievement. C
- 596-2 to 12 Readings in Sociology.** Supervised readings in selected subjects. Prerequisite: consent of instructor and chairman of department. C
- 599-2 to 9 Thesis.** Before a thesis can be submitted, all departmental requirements, including language and comprehensive examinations, must be satisfied. Minimum of 5 hours counted toward a master's degree. C
- 600-1 to 48 Dissertation.** Prerequisite: consent of chairman. C

SPECIAL EDUCATION

- 406-4 Techniques and Interpretation of Hearing Tests.** (See Speech Correction 406.) C
- 410-4 Problems and Characteristics of the Mentally Retarded.** Objectives, curriculum, methods, and materials of instruction for slow learners. Emphasis upon the principles of learning as they can be applied to this group. Observations. Prerequisite: Guidance 305 or Psychology 301 or 303. CE
- 411-4 Education of the Partially Sighted and Blind.** A study of the objectives, curriculum, methods, and techniques of instruction of classes for the partially sighted. Special emphasis on sight conservation in the regular classroom, special equipment, and observation of sight-saving classes. Prerequisites: Guidance 305, Psychology 301 or 303. C
- 412-4 Education of Gifted Children.** Designed to help teachers in the identification of and programming for gifted and talented children. Prerequisite: Guidance 305 or Psychology 301 or 303. CE
- 413-4 Directed Observation of Exceptional Children.** Taken concurrently with a problem course in a specific area which provides student observation and participation in individual work with exceptional children. Prerequisite: consent of instructor. CE
- 414-4 The Exceptional Child.** Physical, mental, emotional, and social traits of all types of exceptional children. Effects of handicaps in learning situations. Methods of differentiation and techniques for rehabilitation. Individual case studies used; observations and field trips. Prerequisites: Guidance 305, Psychology 301 or 303. CE
- 415-4 Education of the Deaf and Hard of Hearing.** Methods of teaching reading and developing language sense in the deaf and hard of hearing. Tactile, visual, and kinesthetic experiences; hearing aids and other special equipment presented in terms of their educational application. Observations. Prerequisites: Guidance 305, Psychology 301 or 303, Speech 105 and 212, or equivalent. C
- 416-4 Education of Orthopedic Children.** Objectives, curriculum, methods, and techniques of instruction of classes for orthopedic children. Emphasis given to program organization, special types of equipment, and observation of classes for the orthopedic. Prerequisite: same as 410. C
- 417-4 The Atypical Child and Social Agencies.** A survey of social agencies contributing to the welfare and care of exceptional children. Emphasis given to services rendered and to methods of contact and cost. Visits made to agencies and institutions; specialists invited to appear before the class. Prerequisites: Guidance 305 or Psychology 301 or 303, and Sociology 101. C
- 418-4 Workshop in Special Education.** Designed to promote better understanding of the psychological and educational problems of atypical children. Specialists used as consultants. Open to seniors and graduate students majoring in education, guid-

- ance, or special education. Prerequisite: Guidance 305 or Psychology 301 or 303. CE
- 419-4 Communication Problems of the Deaf and Hard of Hearing.** (Same as Speech Correction 419.) Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 406 or consent of instructor. C
- 420-4 Methods and Materials for Teaching Exceptional Children.** Offered in conjunction with practice teaching, dealing with methods and materials needed in teaching specific types of exceptional children. CE
- 428-4 Speech Correction for the Classroom Teacher.** (Same as Speech Correction 428.) CE
- 481-4 Seminar.** C
- 501-4 Special Research Problem.** For majors and minors in the areas of special education. Choosing and conducting research activities. The student to select a topic for research and present it, upon completion, to the staff. Prerequisite: consent of staff. CE
- 513-4 Organization, Administration, and Supervision of Special Classes.** Emphasis upon the functions, underlying principles, and cautions to be observed in the organization and administration of special classes. The selection and training of teachers, problems of supervision, special equipment, transportation, co-operating agencies, and legal aspects of the program. Prerequisites: Guidance 305, Psychology 301 or 303. CE
- 570-2 Seminar: Vocational Guidance of the Handicapped.** Examination of vocational problems of the handicapped. Vocations open to handicapped; requisites for success. Advanced majors only. C
- 571-2, 572-2 Special Problems of the Handicapped I, II.** Program development and training of handicapped individuals with special emphasis on the socio-psychological aspects of disability. C
- 573-3 to 4 Psychodiagnostics for Special Populations.** (Same as Psychology 546.) C
- 574-1 to 12 Supervised Experience in Rehabilitation.** Provides for experience both on and off campus in counseling, interviewing, case study, and placement of rehabilitation clients under adequate supervision. C
- 577-4 to 12. Practicum in Special Education.** Practical experience in working with atypical children. A minimum of 8 to 12 hours per week in the classroom with atypical children who exemplify this area of specialization. Special research project. CE
- 580-8 (4,4) Seminar: Exceptional Children.** An intensive investigation of theoretical and research problems of exceptional children for advanced graduate students only. E
- 590-12 (4,4,4) Seminar: Mental Retardation.** An intensive investigation of theoretical and research problems of mental retardation for advanced graduate students only. E
- 596-5 to 9 Independent Investigation.** A field study required of each student working for the sixth-year professional certificate. The work should be done in the setting of a school system where the student is employed or where full co-operation is extended. The study will involve selecting of the problem, survey of pertinent literature, recording of results, and appropriate interpretations and summarizations. C
- 599-2 to 9 Thesis.** Minimum of 5 hours to be counted toward a master's degree. C

SPEECH

- General Speech:** 408-4, 429-4, 440-4, 449-4, 450-12 (4,4,4), 520-3, 530-1 to 4, 532-4, 599-2 to 9, 600-3 to 48.
- Oral Interpretation of Poetry:** 423-4, 424-4, 434-4, 523-3, 530-1 to 4, 599-2 to 9.
- Rhetoric and Public Address:** 407-8 (4,4), 417-4, 418-4, 425-3, 500-4, 504-3, 505-4, 508-4, 510-4, 524-3, 530-1 to 4, 599-2 to 9.
- Speech Education:** 402-4, 410-4, 427-4, 511-3, 525-4, 530-1 to 4, 599-2 to 9.
- 406-4 Teaching Speech in Secondary Schools.** Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: 16 hours of speech. CE
- 407-8 (4,4) History of American Public Address.** Critical studies of American speakers; selected speakers and speeches which reflect the dominant social and political ideas in American history. A lecture, reading, and discussion course. Parts may be taken independently. CE

- 408-4 Psychology of Speech.** Nature and development of speech, its basic psychology, and the part speech plays in personality development. CE
- 417-4 Contemporary Public Address.** A critical study of speakers and speeches selected to present the characteristic ideas of leading social and political developments in national and international affairs since 1918. A lecture, reading, and discussion course. C
- 418-4 British Public Address.** Critical study of British speakers to c. 1920. Selection of material will be governed both by men and the issues that moved men throughout British history. C
- 423-4 Oral Interpretation of Poetry.** The reading of poetry and the interpretation of the thought and emotional content of the poetry to the audience. Prerequisites: 103, 223. C
- 424-4 Oral Interpretation of Dramatic Literature.** Reading, selecting, cutting, and presenting various types of dramatic literature. Each student gives a final recital program of readings. Prerequisites: 103, 223. C
- 425-3 Techniques of Discussion Leadership.** Studies in the field of group discussion designed to clarify the functions and concepts of the leader in democratic society. C
- 427-4 Secondary School Forensic Program.** Coaching and organizational methods for extracurricular and curricular forensic programs in school and college. C
- 429-4 Experimental Studies in Oral Communication.** A survey, analysis, and criticism of experimental approaches to the study of oral communication, with practice in planning and conducting experimental studies. C
- 434-4 Lecture and Lecture-Recital.** Study of professional work on the public platform which is climaxed by a lecture or recital of a professional nature. Prerequisite: 12 hours of public speaking, interpretation, or theater. C
- 440-4 Advanced Phonetics.** Phonetic theory. Materials and methods of linguistic geography. Prerequisite: 200. C
- 441-4 Teaching Speech in Elementary Schools.** C
- 449-4 General Semantics.** Means of changing implications so that language, in spoken or written form, describes the life facts. CE
- 450-12 (4,4,4) Laboratory in Interpersonal Communication.** Communication viewed as a process of relating and evaluating. Applications of general semantics and related philosophy, methodology and research to the functioning of the class itself through various speech activities. The course encompasses the common core of communication behaviors relevant to the chief communication specialties. C
- 500-4 Survey of Classical Rhetoric.** Ancient rhetoricians and orators from Corax to Augustine, with special emphasis upon the works of Aristotle and Cicero. Lectures and special studies. C
- 504-3 Medieval Rhetorical Theory.** An examination of the trends in rhetorical theory between A.D. 100 and 1600 designed to facilitate understanding of the transition from classical to modern theory. C
- 505-4 Modern Rhetorical Theory.** An analysis of selected theories of public address from the seventeenth century to the present, with a view of discovering the methods and objectives of modern rhetoricians and relating them to society and its problems during the period. C
- 508-4 Seminar: Studies in Discussion.** Studies in group thinking and group action with a view to improving discussion and conference techniques. C
- 510-4 Seminar: Persuasion and Social Control.** Studies covering the uses and applications of persuasion in the various fields of social activity. The mass media will be examined as they apply to such areas as politics, business, religion, and education. C
- 511-3 Teaching the College Speech Course.** Problems, methods, and materials in the teaching of speech in college with primary emphasis on the basic course. Examination of textbooks, courses of study, curriculum making, measurement, and relationship to other fields. C
- 520-3 Philosophical Foundations of Speech.** A special course reviewing the philosophy of speech for graduate and advanced students. Designed to take advantage of the knowledge and background of distinguished visiting professors. C
- 523-3 Seminar: Problems in Interpretation.** An investigation of the more advanced

problems in oral interpretation, such as creation of atmosphere, use of restraint, impersonation, and impressionism. Prerequisites: 18 hours in interpretation and theater and consent of instructor. C

524-3 Problems in Rhetoric and Public Address. Individual problems in the theories and methods in various fields of public speaking; a survey of the areas and methods of graduate research in public speaking. Prerequisite: 12 hours of public address. C

525-4 Seminar: Speech Education. Problems of philosophy and methods of teaching speech in the elementary and secondary schools. Prerequisite: 306 or consent of instructor. C

530-1 to 4 Research Problems. Individual work upon selected problems for research. C

532-4 Areas and Techniques of Research in Speech. Study and analysis of outstanding works in the various areas of research. Lectures on research techniques and study possibilities in the field. C

599-2 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

600-1 to 48 Dissertation. Minimum of 36 hours to be earned for the Ph.D. degree. C

SPEECH CORRECTION

400-1 to 4 Independent Study in Speech Correction and Audiology. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with instructor. May be repeated up to six hours of credit. C

405-12 (4,4,4) Practicum in Speech and Hearing Therapy. Clinical and school procedures in speech correction and audiology. One hour of class per week, and two hours of clinical activity or work on clinically related projects for each hour of credit. Prerequisite: Junior Standing in Department. 405A (fall) emphasizes therapeutic procedures. 405B (winter) emphasizes diagnostic techniques. 405C (spring, summer) emphasizes the utilization of forms and the preparation of reports. Students may have up to twelve hours total credit in this course. Need not be taken in sequence, but A, B, or C cannot be repeated. C

406-4 Techniques and Interpretation of Hearing Tests. Principles and techniques of testing the hearing and interpreting those tests in terms of the individual's needs. C

409-4 Research Techniques in Speech Science. A presentation of the research techniques used in speech science with particular emphasis on equipment, experimental design, and study of significant research contributions to the field. Open to advanced students in speech or those with consent of the instructor. C

412-4 Cerebral Palsy. An investigation of the etiology, problems, and therapy of cerebral palsy. Prerequisite: 212 or consent of instructor. C

414-4 Anatomy and Physiology of Speech and Hearing Mechanisms. (See Physiology 414.) C

415-4 Aphasia. An investigation of the etiology, problems, and therapy of aphasia. Prerequisite: 412 or consent of instructor. C

416-4 Hearing. Designed to acquaint the student with the theories and facts concerned with the functions of the hearing mechanism. Prerequisite: 406 or consent of instructor. C

419-4 Communication Problems of the Deaf and Hard of Hearing. (Same as Special Education 419.) Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 406 or consent of instructor. C

420-4 Advanced Clinical Audiometry. Principles and procedures for advanced audiometric testing. Prerequisite: 406 or consent of instructor. C

428-4 Speech Correction for the Classroom Teacher. (Same as Special Education 428.) Etiology and therapy of common speech defects. Open to in-service teachers, seniors, and graduate students in education. CE

515-1 to 4 Readings in Speech Pathology. Supervised and directed readings in specific areas of speech pathology. C

516-1 to 4 Seminar in Residual Hearing. Special problems of auditory training, speech reading, hearing aids, and programming for aural rehabilitation. C

- 520-1 to 4 Seminar in Hearing.** Special hearing problems of interest to the advanced student. Special projects and field work. C
- 521-1 to 4 Seminar in Articulation and Delayed Speech.** Special problems of language development and articulation. C
- 522-16 (4,4,4,4) Seminar in Organic Speech Problems.** Prerequisites: Graduate standing in Department: (a) Developmental anatomy and physiology. (b) Teratology, Surgery, and Dentistry. (c) Neuropathological bases. (d) Clinical Management. Must be taken in a,b,c,d sequence or by consent of instructor. C
- 529-12 (4,4,4) Seminar in Stuttering Behavior.** (a) emphasizes theoretical analysis, (b) emphasis on diagnostic techniques, (c) application of principles to therapy. Must be taken in a,b,c sequence or by consent of the instructor. C
- 530-1 to 4 Research Problems in Speech Correction.** Individual work upon selected problems for research. C
- 531-1 to 4 Seminar in Experimental Phonetics.** An investigation into the experimental approaches for the study of the phenomena of speech. C
- 533-1 to 4 Seminar in Speech Science.** Special problems in voice science, and acoustic perception. C
- 534-1 to 4. Seminar in Instrumentation.** Familiarity with instruments, their uses, capabilities, and limitations, as they apply to the study of speech and hearing. C
- 536-1 to 4. Seminar in Administration of Speech and Hearing Programs.** A study of program settings, organizational procedures, and professional interrelationships in adult speech and hearing therapy. Field trips to rehabilitation centers and related agencies. C
- 599-2 to 9 Thesis.** C
- 600-1 to 48 Dissertation.** C

TECHNOLOGY

- 421-2 to 8 Practicum in Technology.** Experiences in the industrial applications of technological knowledge. Cooperative arrangements with selected corporations and professional organizations provide opportunity to study technical problems in the industrial environment under the direction of specialists. Prerequisite: 12 hours in technical subjects. C
- 430-2 to 8 Special Problems in Industry and Technology.** Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Prerequisite: consent of instructor. C
- 570-2 to 6 Special Investigations.** For students who wish to make a thorough study or investigation of a specific problem in technological education. C
- 580-3 to 9 Seminar.** Collective and individual study of selected issues and problems relating to the various areas of technological education. C
- 599-1 to 9 Thesis.** C

THEATER

- 402-8 (4,4) Play Directing (C); 402-4 Directing (E).** (a) The principles and procedures of play direction including play selection, interpretation, and the patterning of auditory and visual stimuli. (b) Continuation of 402a emphasizing rehearsal procedures, control of tempo and mood, styles of presentation and performance, and other techniques in the direction of plays. CE
- 403-4 Aesthetics of the Drama and the Theater.** Principles and practice of modern dramatic production in the light of modern aesthetic theory. A course attempting to formulate an aesthetic judgment of the theater. C
- 404-4 Theater Management.** Theater operational procedure, including both fundamental structuring and house management. The former aspect includes administration, purchasing, and accounting practices, ticket sales, publicity, promotion, and public relations. The latter covers the management of box-office and ushering. C
- 405-8 (4,4) The Scenic Imagination.** (a) A study of the purely creative side of stage production. It includes an analysis of the script and its meaning for an audience;

a poetic evaluation of the setting, costumes, and lighting; and the blocking out of the stage action. (b) Theater research and documentation; an approach to sketches and models; a review of the historic forms of staging, with emphasis on the modern styles from naturalism to epic theater. C

406-1 American Professional Theater Procedures and Practices. An introduction to the everyday realities of a professional stage career, including problems of survival, professional ethics and protocol, personal relations, and the function of stage unions. C

409-4 High School Theater and Its Production Problems. C

411-4 Playwriting. The writing of a full-length play, a children's play, or a historical pageant-drama forms the basis of the course. Students may elect to write two one-act plays. Individual conferences supplement the class discussion and analysis of student writing. Prerequisite for graduate students: consent of instructor. C

412-4 Stage Design. The design of settings for the stage and other dramatic media. Prerequisite: 207. C

414-4 Costume Design. C

415-4 Advanced Costume Design. C

432-4 Stage Lighting. Instruments and control equipment; principles and techniques of lighting dramatic productions. C

438-4 Contemporary Developments in the Theater. Critical study of theory and practice in acting, directing, production, and architecture in the modern theater. The rise and development of the film, radio, and television as dramatic media. C

439-4 Contemporary Theatrical Theory and Practice. The development of modern theatrical production; study of recent ideas in theater architecture, staging, and performance. Consideration of the film and television as dramatic media. Prerequisite: 121a or 121b or consent of instructor. E

502-4 Advanced Directing. Study of and practice in the techniques of directing period plays, verse plays, music dramas, arena productions and other types and styles of plays presenting special directing problems. C

503-4 Advanced Technical Problems. Solutions for problems presented by certain types of plays and modes of production. Study of drawing problems in the planning of floor plans, pictorial views, working drawings, and elevations. C

504-4 The Comic Theater. A study of comedic theory as applied to major types of dramatic composition. Dramatic theories of comedy from Aristotle to Freud are explored. Individual reports. C

505-4 The Tragic Theater. An examination of tragic drama and criticism as related to the societies which produced such drama. Particular emphasis is placed upon the Athenian, Elizabethan and modern theater. C

506-4 The American Theater. The study of the development of the drama and the theater in the United States from colonial times to the present. Prerequisite: 313 or its equivalent. C

509-4 The High School Theater and its Production Problems. Consideration of stages, machinery, equipment, light controls and instruments, production techniques, and analysis of basic needs of high school theater. C

518-4 Theater Audience. A course attempting to determine (1) the relations between the drama, *mise-en-scène*, and theater audience; and (2) the psychological nature of the spectator's experience in the theater. C

519-1 to 12 Theater Practicum. Practical experience in acting, directing, and associated work on campus, on area tours, and in summer stock. C

526-3 Seminar in Theater Arts. Special problems of interest to the advanced student. C

530-1 to 4 Research Problems in Theater. Individual work upon selected problems for research. C

599-1 to 9 Thesis. Minimum of 5 hours to be counted toward a master's degree. C

ZOOLOGY

400-2 (C); 400-3 (E) Animal Taxonomy. The concepts of taxonomy and their use in zoology. Prerequisite: one year of biology or consent of instructor. CE

- 401-5 Genetics.** Principles of inheritance, including genetic mechanisms, mutation, and selection. Prerequisite: 15 quarter hours of biological science and consent of instructor. CE
- 402-4 Natural History of Invertebrate Animals.** Observation, identification, and life histories. Designed for teachers. Not for students specializing in invertebrate zoology. Prerequisite: one year of zoology including 102. CE
- 403-4 Natural History of Vertebrate Animals.** Observation, identification, and life histories. Designed for teachers. Not for students specializing in vertebrate zoology. Prerequisite: one year of zoology including 103. CE
- 404-4 to 8 Zoology Field Studies.** A trip of four to eight weeks to acquaint students with animals in various environments and/or with methods of field study, collection, and preservation. Arrangements made spring quarter. Cost per individual will be approximately \$25 per week. (Only 4 hours may be used for credit.) Prerequisite: consent of department. CE
- 406-4 Protozoology.** Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods of culturing and studying. Prerequisite: one year of zoology including 102 or consent of instructor. CE
- 407-5 Parasitology.** Principles, collection, identification, morphology, life histories, and control measures. Prerequisite: one year of zoology including 102. CE
- 408-4 Herpetology.** Taxonomic groups, identification, and natural history of amphibians and reptiles. Prerequisite: one year of zoology. CE
- 409-5 Histology of Organs.** Microscopic structure of organs and tissues with emphasis on mammalian forms. Prerequisite: 202. C
- 410-4 Vertebrate Paleontology.** History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships. Prerequisite: one year of zoology including 202 or Geology 301. C
- 412-4 Advanced Entomology.** Morphology, physiology, systematics, and distribution of insects. Prerequisite: one basic course in entomology. CE
- 413-5 The Invertebrates.** Structure, development, and natural history of invertebrates, except insects and parasites. Prerequisites: one year of zoology, including 102. C
- 414-4 Fresh-Water Invertebrates.** Taxonomic groups, identification, and natural history of the regional fauna. Prerequisites: one year of zoology, including 102. C
- 441-4 Developmental Biology.** Principles of development in organization. Prerequisite: 300 and one course in cellular physiology, or consent of instructor. C
- 459-4 Game Birds.** Natural history and management. Prerequisite: one year of zoology including 103. C
- 461-4 Mammalogy.** Taxonomic groups, identification, and natural history of mammals. Prerequisite: one year of zoology including 103. CE
- 463-4 Game Management.** General survey of management techniques. Prerequisites: one year of biological science, consent of instructor. C
- 465-4 Ichthyology.** Taxonomic groups, identification, and natural history of fishes. Prerequisite: one year of zoology including 103. C
- 466-4 Fish Management.** Sampling, dynamics, and manipulation of fish populations, age and growth of fishes, and habitat improvement. Prerequisites: one year of biological science, consent of instructor. C
- 480-3 Zoogeography.** Concepts and principles relating to patterns of animal distribution on a continental and world-wide basis. Prerequisite: 103 or consent of instructor. E
- 501-4 Animal Biology For High School Teachers of Biology.** Designed to add new interpretations and evaluations to the in-service teacher's previous training in animal biology. Principles illustrated by laboratory and field work will be re-emphasized in the context of modern concepts of biology. Prerequisite: one year of biology. C
- 502-2 Recent Developments in Biological Sciences.** A series of lectures based upon recent research, designed to acquaint the in-service teacher with advances and changes in concepts. Prerequisite: one year of biological science. C
- 507-8 BSCS—High School Biology.** C
- 508-4 Helminthology.** Identification, structure, physiology, and life history of parasitic worms. Prerequisite: consent of instructor. C

- 510-4 Bio-ecology.** Composition and development of biotic communities, and the relationships of plants and animals to their environment. Cost of field trips may be \$10-\$25 per student. Prerequisite: consent of instructor.
- 511-4 Limnology.** Principles exemplified by the lakes and streams of Southern Illinois. Cost of field trips may be \$10-\$25 per student. Prerequisite: consent of instructor.
- 512-3 Animal Geography.** Principles of the distribution of the animals of the world. Prerequisite: consent of instructor.
- 513-3 Advanced Ornithology.** Taxonomic groups, structure, and behavior of birds. Prerequisite: consent of instructor.
- 520-5 Advanced Invertebrate Zoology.** The nature and life of invertebrate animals with emphasis on comparative form, function, behavior, and occurrence.
- 521-4 Advanced Limnology.**
- 525-5 Cytology.** (Same as Botany 525.) Microscopic study of protoplasm, including mitosis and meiosis; discussions of cytological behavior. Prerequisite: consent of instructor.
- 540-3 Factors in Animal Reproduction.** Genetic and physiological factors in determination, differentiation, and modification of sex in animals. Prerequisite: consent of instructor.
- 560-3 Advanced Game Management.** Principles of maintenance and improvement of game resources. Prerequisite: consent of instructor.
- 561-4 Game Mammals.** Natural history and management. Prerequisite: consent of instructor.
- 566-4 Fish Culture.** Production of game, food, and bait fishes. Design of facilities chemical and biological variables, spawning techniques, diseases and nutrition. Prerequisite: consent of instructor.
- 578-4 Population Genetics.** Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Prerequisite: consent of instructor.
- 579-4 Animal Behavior.** The biological basis for the actions and responses of animals. Prerequisite: consent of instructor.
- 580-4 Advanced Systematics.** The implication of systematics, including the theory and dynamics of classification, speciation, population genetics, and evolution. Prerequisite: consent of instructor.
- 581-3 Readings in Current Zoological Literature.** Prerequisite: graduate status in biological science.
- 582-1.5 (.5,.5,.5) Graduate Zoology Seminar.** Credit may not be used by majors in zoology.
- 583-3 (1,1,1) The Teaching of Zoology in College.** Methods, practices, and objectives in teaching zoology. Designed as part of the apprenticeship program for preparation of college teachers. Prerequisite: graduate status in a biological science.
- 584-3 (1,1,1) Protozoology Seminar.** Advanced discussions of trends and problems in protozoology. Prerequisite: 406 or consent of instructor.
- 596-2 to 12 Special Research.** Investigations in zoology other than those for the degree. Only 3 hours may be credited toward a degree. Prerequisite: consent of instructor.
- 599-2 to 9 Research and Thesis.** For master's degree.
- 600-3 to 48 Research and Dissertation.** For doctor's degree.



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General Studies
1965-66



Southern Illinois
University Bulletin

OBJECTIVES OF SOUTHERN ILLINOIS UNIVERSITY

TO EXALT BEAUTY

*In God,
in nature, and
in art;
Teaching how to love the best
but to keep the human touch;*

TO ADVANCE LEARNING

*In all lines of truth
wherever they may lead,
Showing how to think
rather than what to think,
Assisting the powers
of the mind
In their self-development;*

TO FORWARD IDEAS AND IDEALS

*In our democracy,
Inspiring respect for others
as for ourselves,
Ever promoting freedom
with responsibility;*

TO BECOME A CENTER OF ORDER AND LIGHT

*That knowledge may lead
to understanding
And understanding
to wisdom.*

General Studies

1965-66



Southern Illinois University Bulletin

SOUTHERN ILLINOIS UNIVERSITY BULLETIN

VOLUME 7, NUMBER 8

AUGUST, 1965

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This Issue.....

of the *Southern Illinois University Bulletin* covers in detail questions concerning General Studies and applies to both the Carbondale Campus and the Edwardsville Campus. It supersedes Volume 6, Number 9.

THE FOLLOWING issues of the *Southern Illinois University Bulletin* may be obtained free from Central Publications, Southern Illinois University, Carbondale, Illinois 62903.

Schedule of Classes. Please specify *quarter* (fall, winter, spring, or summer) and *campus* (Carbondale or Edwardsville).

Graduate Catalog.

Division of Technical and Adult Education.

Financial Assistance.

Undergraduate Catalog. The catalog will be available (by October, 1965) for examination in high school guidance offices and libraries throughout Illinois and in some other states. Copies will be furnished free to educational institutions upon request and to new students upon matriculation. The catalog may be purchased at the University Bookstore for \$1; mail orders should be sent to Central Publications and must include remittance payable to Southern Illinois University.

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University Calendar

<i>FALL, 1965</i>	New Student Week	Sunday–Tuesday, September 19–21
	Quarter Begins	Wednesday, September 22
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 24–29
	Quarter Ends	Saturday, December 18
<i>WINTER, 1966</i>	Quarter Begins	Monday, January 3
	Quarter Ends	Saturday, March 19
<i>SPRING, 1966</i>	Quarter Begins	Wednesday, March 23
	Memorial Day Holiday	Monday, May 30
	Quarter Ends	Wednesday, June 8
	Commencement (Edwardsville)	Thursday, June 9
	Commencement (Carbondale)	Friday, June 10
<i>SUMMER, 1966</i>	Quarter Begins	Monday, June 13
	Independence Day Holiday	Monday, July 4
	Quarter Ends	Saturday, August 27
	Commencement (Carbondale)	Saturday, August 27
	Commencement (Edwardsville)	Sunday, August 28
<i>FALL, 1966</i>	New Student Week	Sunday–Tuesday, September 18–20
	Quarter Begins	Wednesday, September 21
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 23–28
	Quarter Ends	Saturday, December 17
<i>WINTER, 1967</i>	Quarter Begins	Monday, January 2
	Quarter Ends	Saturday, March 18
<i>SPRING, 1967</i>	Quarter Begins	Wednesday, March 22
	Memorial Day Holiday	Tuesday, May 30
	Quarter Ends	Wednesday, June 7
	Commencement (Carbondale)	Thursday, June 8
	Commencement (Edwardsville)	Friday, June 9

CLASSES BEGIN on the second day of the quarter, except that the evening classes (5:45 P.M. or later) on the Carbondale Campus begin on the first night of the quarter.

Board of Trustees and
Officers of Instruction



BOARD OF TRUSTEES

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General Studies

I

THE GENERAL STUDIES program, required for the bachelor's degree, replaces a program of distributive requirements, which called for the student to take a certain number of hours in several specified areas. In such a plan the student paid little attention to the order in which the courses were taken and sometimes even to the time, during his four years, when they were taken. Knowledge has a unity which is violated by such arrangement, and it is felt that only the better students put it all together in proper meaning and perspective.

Several recent developments have influenced colleges and universities toward General Studies programs. One of these is the explosive increase in the amount of knowledge that man has achieved. Another is that an increased standard of living has permitted a greater proportion of qualified youth to enter college. Colleges and universities are slowly accepting the new roles and responsibilities that have been thrust upon them and are accepting the fact that the subject matter of a university does not exist independently of the society which supports it.

Even a cursory examination of college catalogs will convince the impartial examiner of the need for some counter balances to specialism. The number of course offerings is seldom in direct proportion to the value of the courses. Further, the education of an enlightened people through the transmission of the culture of our times is a basic objective of higher education. Specialists themselves realize that rigid concentration within any field of study may deprive them of broader understandings so important for participation in life as citizens and parents.

Frequently the question is raised, "Why must I take this course or that course? I am preparing to make this subject my life's work, and will not need the other courses I am being made to take." The answer is, of course, that all of our society must understand the ways in which the awesome discoveries in atomic energy, rocketry, and medicine, etc., shape our happiness, and may even determine our national survival. It has been said that the tempo of scientific progress is geared to our national security and welfare.

The technological revolution brought on by these discoveries has presented us with many social problems. These problems, too, have risen quickly, and the consequent social reactions of apathy, boredom, anxieties, frustration, changes in values, change in role, etc., indicate a clear need for better understanding to bring about a better social adjustment. Our edu-

cational efforts must produce citizens and leaders with an ability to use knowledge in a way which also advances social and cultural life.

Many leaders in higher education are convinced by the hard school of experience that a smattering and cafeteria-style sampling of introductory courses offered by "departments" have not provided a unified, broad understanding of the world that surrounds us. They note the advances that have come from research in the area of the psychology of learning. This comparatively new branch of the social sciences calls attention to new methods for stimulating reflective thinking, desires for stimulating learning, and better methods of presenting materials. Leaders in higher education are currently interested in the experimentation throughout the nation with teaching machines, with instruction through television, and with team teaching. Perhaps some of these new devices and new methods will lend themselves to the teaching of courses that meet the criteria for General Studies. There is a growing belief that instructional materials should be selected for the influence they will presumably have on the intellectual, moral, social, and personal development of students as well as for the support they may provide to a specific department or discipline.

General Studies are only part, not the whole, of man's education. While General Studies can conceivably help a student in his choice of occupation and can contribute to his success in a given occupation, their principal objective is not to develop vocational skills. They comprise that portion of the total curriculum which is concerned with the common needs of man and which assists the student to be more at home in a world that increasingly demands more of all men in terms of the intellectual, spiritual, and social. One of the prime purposes of a General Studies program is to prepare students to assume their proper responsibilities in an ever changing world.

The General Studies program at Southern Illinois University has been structured to build in a relevance and continuity of subject matter. Progressive three-quarter sequences (three hours per quarter) have been designed. First-level or freshman courses are planned sequences, with the second quarter's work based upon the first and the third quarter's work based upon the second. Second-level courses are normally completed during the sophomore and junior years. Third-level courses are offered to juniors and seniors. The new courses are not self-contained isolated units. The result is that a sense of unity is given to the whole program.

MATRICULATION

A student entering the University as a freshman is enrolled in General Studies (except one entering the Vocational-Technical Institute). A student is permitted to make a tentative choice of his primary field of interest, but he does not formally apply for admission into a specialized field until a total of 64 or more quarter hours have been attained.

Transfer students with fewer than 64 quarter hours will also be enrolled in General Studies as will those transfer students with more than 64 quarter hours whose educational goals are not yet determined. All students in Gen-

eral Studies must initiate transfer into their chosen unit before enrolling in their 97th hour of credit.

ADVISEMENT AND REGISTRATION

The new student can advance register and should see an adviser. During his first quarter, and each quarter thereafter, he is expected to advance register for the succeeding quarter. Advisers need be consulted during registration only if necessary. The adviser is available for help if needed, but the responsibility for a correct registration and for meeting the requirements rests upon the student. He is encouraged by his general adviser, even during his first two years, to consult with representatives of the appropriate academic units concerning his possible field of interest.

The student is expected in his second year to take the Sophomore Testing Program, and in the quarter he expects to graduate to take the Graduate Record Examination. Students will be notified of the times and places of the examinations.

ACCELERATION AND PLACEMENT

There are three ways in which partial requirements of the General Studies program may be met without taking the courses specifically designed to meet those requirements. They are waivers, advanced-standing assignments, and proficiency examinations.

Depending upon their preparation in a particular subject, students may be placed in different sections of a particular course or in different sequences.

All students enrolled in the General Studies program are urged to consult their advisers at the earliest possible moment concerning the procedures for accelerating their courses of study.

W A I V E R S

Each student is entitled to waive (i.e., omit entirely) the first-level sequence in the area (*A*, *B*, or *C* only) in which he will concentrate his work and to begin his work in that area at the second level. This is inadvisable, however, for some students; and the department or division involved may require the student to take the first-level sequence. Of course the student who has not chosen a field of concentration cannot waive a first-level sequence.

A D M I S S I O N W I T H A D V A N C E D S T A N D I N G

More commonly, advanced standing will be achieved on the basis of A.C.T. scores and the high school record, or through passing a special advanced-standing examination (not the proficiency exam). When a student qualifies for and requests advanced standing in a course he will not ordinarily be permitted to later enroll in that course for credit. For example, one who qualifies for advanced standing in GSD 114 will not take GSD 114 for credit.

A student who gains exemption from certain courses by advanced standing may (1) take advanced work in that area if more work is required by the General Studies program, (2) discontinue any further work in that area if it is not required by the General Studies program, (3) take advanced work in that area to satisfy the requirements of a particular curriculum, or (4) take additional courses in that area as electives.

Advanced standing for the General Studies program should not be confused with the High School Advanced Placement Program of the College Entrance Examination Board. Information on the Advanced Placement Program appears in the Undergraduate Catalog.

PROFICIENCY EXAMINATIONS

The rules covering the General Studies proficiency examinations are similar to those governing other proficiency examinations.

Upon passing a proficiency examination in a course with a credit of "passing," a student will be granted regular credit toward graduation or toward any other legitimate objective. His record will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination"; however, this credit will be neutral in the calculation of grade point average. If a student fails a proficiency examination, his record will show nothing, but the report will be appropriately filed.

Information concerning proficiency examinations may be secured from the Registrar's Office, Carbondale, or from the Office of Academic Advisement, Edwardsville.

OUTLINE OF GENERAL STUDIES REQUIREMENTS

<i>Area A: Man's Physical Environment & Biological Inheritance</i>	24 hrs.
A first-level basic sequence	(GSA-1) 9 hrs.
A second-level continuation sequence	(GSA-2) 9 hrs.
Third-level advanced courses	(GSA-3) 6 hrs.
<i>Area B: Man's Social Inheritance & Social Responsibilities</i>	24 hrs.
A first-level basic sequence	(GSB-1) 9 hrs.
A second-level continuation sequence	(GSB-2) 9 hrs.
Third-level advanced courses	(GSB-3) 6 hrs.
<i>Area C: Man's Insights & Appreciations</i>	24 hrs.
A first-level basic sequence	(GSC-1) 9 hrs.
A second-level continuation sequence	(GSC-2) 9 hrs.
Third-level advanced courses	(GSC-3) 6 hrs.
<i>Area D: Organization & Communication of Ideas</i>	18 hrs.
Required college composition and speech	(GSD-1) 9 hrs.
Either a foreign language sequence or a basic mathematics sequence	(GSD Math or FL) 9 hrs.
<i>Area E: Health & Physical Development</i>	6 hrs.
First-level required physical education	(GSE PE) 3 hrs.
Second-level required health education	(GSE-2) 3 hrs.
<i>Total</i>	96 hrs.
If a first-level sequence is waived, the total is only 87 hours.	

SPECIFIC REQUIREMENTS—CARBONDALE

FRESHMAN LEVEL		39-48 HOURS
GSA-1	101-9 (phys, chem, chem) lab is optional	9
GSB-1	101-9 (hist, hist, geog)	9
GSC-1	110-9 (western humanities) ; OR 103-3 (mus) or 101-3 (art), 102-3 (phil), 103-3 (lit)	9
GSD-1	101-6 (Eng comp), 103-3 (spch)	9
GSD Math or FL	108-9 (Math) ; OR 108-6, 110-3 (bus, econ, ag econ students only) ; OR 114-9 (col alg & trig) ; OR a 9-hour course in a foreign language	
GSE PE (men)	101a (swim) or 102; plus 2 hours excluding 101a, 102;	
(women)	OR 111a (swim) or 112 or 113d, plus 2 hours excluding 111a, 112, 113d; BUT each student who cannot pass a swimming test must take 101a or 111a, and not more than two hours in 101 and 103 or in 111 and 103 may apply toward the requirement.	3
FC	Attendance at freshman convocations for 3 quarters is required but is not part of the G. S. program.	0
SOPHOMORE LEVEL		30 HOURS
GSA-2	201-9 (biol), or biol -6 and 200-3 (geol)	9
GSB-2	201-9 (anth, psyc, soc) ; OR 211-9 (econ, govt, econ-govt)	9
GSC-2	209-3 (modern lit) or 202-3 (poetry) or 203-3 (thea), and 200 (speech) or 204-3 (art) or 205-3 (des) or 206-3 (mus), and 207-3 (phil) or 208-3 (logic) or 201-3 (drama) or 210-3 (fiction) ; OR 211-9 (oriental humanities)	9
GSE-2	201-3 (health educ)	3
JUNIOR LEVEL		18 HOURS
GSA-3	Any two of the following, except not both 330 & 331: 301 (phil), 302 (psyc), 312, 313, 314, 315 (zool), 321 (geol), 330, 331 (geog), 340, 345, (bot) 358a,b (tech), 363a (phil)	6
GSB-3	Any two of the following: 300a, 300b, 300c ¹ , 301, 302, 303, 304 (govt), 311, 312, 313 (econ), 314 (ag-econ), 320 (soc, summer abroad), 321 (soc), 323 (hist), 325 (soc), 331 (educ), 333 (hist), 341 (soc), 343 (geog), 369 (hist), 385, 390, 392 (govt)	6

¹ Except 300c may not be taken separately for General Studies credit.

GSC-3	Any two of the following: 301 (Eng), 305 (Fr), 307 (govt), 310, 311, 312 (phil), 313 (Eng), 318 (Eng, summer abroad), 320 (Grk), 321 (Eng), 330 (Grk), 331 (Ltn), 335 (Eng), 340, 341, 342 (art), 345 (Eng), 348 (p & p), 365 (Eng), 363a (phil), 381, 382, 383, 386, 387 (phil)	6
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SPECIFIC REQUIREMENTS—EDWARDSVILLE

FRESHMAN LEVEL		39-48 HOURS
GSA-1	101-9 (phys, phys-chem, chem)	9
GSB-1	101-9 (geog, hist, hist)	9
GSC-1	151-3 (poetry), 152-3 (logic), 100-3 (mus) or 101-3 (art)	9
GSD-1	101-6 (Eng comp), 103-3 (spch)	9
GSD Math or FL	112-9 (math); OR 114-6 (col alg) 114c-3 (trig) or 114d-3 (stat); OR a 9-hour course in a foreign language	9
GSE PE (men)	101a (swim), 102, plus one hour excluding 101a, 102;	
(women)	OR 111a (swim), 112, plus one hour excluding 111a, 112; BUT a student who passes a swim test or for whom no swim facilities are provided must take 102 or 112 and 2 hours from 103, 104 or from 113, 114.	3
SOPHOMORE LEVEL		30 HOURS
GSA-2	201a-3 (biol), 201b-3 (biol), 201c-3 (biol), or 200-6 (earth science)	9
GSB-2	201-9 (anth, soc, psyc); OR 211-9 (econ, govt, govt-econ)	9
GSC-2	251-9 (lit-phil); OR 251a,b-6, and 203-3 (thea) or 200-3 (spch), or 255-3 (mus) OR 251a,c-6 and 203-3 (thea) or 200-3 (spch), or 255-3 (mus)	9
GSE-2	201-3 (health educ)	3
JUNIOR LEVEL		18 HOURS
GSA-3	Any two of the following, except not both 330 & 331: 312 (conservation), 330, 331 (geog), 356 (astr), 358a,b, 361 (phys), 363a,b (phil, sci)	6
GSB-3	Any two of the following: 300a,b,c (hist), 311 (econ), 312 (econ), 331 (educ), 341 (soc), 345 (govt), 351a,b (geog-anth), 354 (econ-geog), 356 (econ), 359a,b (soc, govt), 382a,b (hist), 385 (govt)	6
GSC-3	Any two of the following: 335 (Eng lit), 351a,b,c (art), 354a,b (thea), 357a,b,c (mus), 360a,b (art, mus, lit), 363a,b (phil-sci)	6

Course Descriptions

2

A CAPITAL C after a course description indicates that the course is given only on the Carbondale Campus; a capital E indicates that the course is given only on the Edwardsville Campus. The absence of both letters indicates that the course is given on both campuses.

Following the course number are a dash and a numeral indicating the total credit given for the course. In a case where additional numerals appear in parentheses, the course does not terminate in one quarter but continues for two or more quarters. Credit given for each part of the course is indicated by the numerals in parentheses.

MAN'S PHYSICAL ENVIRONMENT AND BIOLOGICAL INHERITANCE (GSA)

101-9 (3,3,3) Introduction to Physical Science. The basic physical and chemical principles necessary to understand energy, and the properties and behavior of matter. Must be taken in a,b,c sequence. Prerequisite: Mathematics 106 or satisfactory score on placement test.

200-3 Earth Science. A study of the earth: the materials which compose it, its various surface formations, the processes which change it, its relationship to the sun, and its mapping. No second level prerequisites. May be taken in lieu of one part of 201.

201-9 (3,3,3) Man's Biological Inheritance. The fundamentals of biological science: the cell, inheritance, evolution, the diversity of living organisms, and the structure and function of higher animals and plants. Must be taken in a,b,c sequence, with these exceptions: Carbondale students may take either 200, 201a, and 201b or 201a, 201b, and 200; Edwardsville students may take either 201a, 200, and 201c or 201a, 201b, and 200. Prerequisite: 101c (C); high school chemistry or Chemistry 111 (E).

301-4 Principles of Physiology. A comprehensive introductory analysis of the functional machinery of the human body. C

302-3 Psychobiological Foundations of Behavior. A study of the behavioral characteristics of living organisms, especially those of mammals and man. C

312-3 Conservation of Natural Resources. A study of man's use and misuse of natural environment.

313-3 Evolution. Principles and processes of the evolution of living things, including man. Prerequisite: one year of biology. C

314-3 Man's Genetic Heritage. Principles of heredity as related to man, with emphasis on the effects of environment on his biological inheritance. C

315-3 History of Biology. The inter-relationships between the development of biological knowledge and the history of mankind. C

321-3 Introduction to Paleontology. A study of the record of fossil plants and animals and the application of biological and geological principles to the development of theories regarding their origin, evolution, distribution, and extinction. C

330-3 Weather. A study of weather elements basic to understanding the various atmospheric happenings, with application to agriculture, industry, recreational resources, etc. Students may take only 330 or 331 for General Studies credit.

- 331-3 Climate.** Description and interpretation of climatic regions and their influence on human activity. Students may take only 330 or 331 for General Studies credit.
- 340-3 Ecology.** A consideration of ecological principles with emphasis upon examples relating to vegetation. C
- 345-3 Economic Botany.** The study of man's dependence upon plants, domestication, production, consumption, crop ecology, possible new uses of plants. C
- 356-3 Astronomy.** The earth, moon, solar system, galaxy, and universe. A first course, largely descriptive, but relating behavior of celestial bodies to fundamental physical laws. Prerequisite: GSA-1 or Physics 211a. E
- 358-6 (3,3) Analysis of Physical Systems.** Quantitative applications of the principles of classical and modern physics. Prerequisite: GSA-1 or 211a, GSD 114-9. Not open to students who have taken college physics.
- 361-3 Physics of Music and Acoustics.** Nature, propagation, sources, and receptors of sound; acoustic phenomena; physics of musical instruments; mathematics of music; ears and hearing; physiology and psychology; transmission, storage, and reproduction. E
- 363-6 (3,3) Philosophy of Science.** (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. May be taken in a,b or b,a sequence, but a,b is preferable. E

MAN'S SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES (GSB)

- 101-9 (3,3,3) Survey of Western Tradition.** (a) A general survey of the geographic setting in which Western civilization developed. Physical, economic, and historical geography of past and present Europe. (b) A general survey of the political, economic, social, and intellectual development of Western Europe from the Middle Ages through the French Revolution. (c) A general survey of the political, economic, social, and intellectual development of Western Europe since the French Revolution. Must be taken in a,b,c sequence (E); b,c,a sequence (C).
- 201-9 (3,3,) Culture, Society, and Behavior.** An examination of the anthropological, sociological, and psychological contributions to the understanding of human behavior. Must be taken in a,b,c sequence at Edwardsville or b,c,a sequence at Carbondale.
- 211-9 (3,3,3) Political Economy.** The functioning of the economy, the theory, organization, and operation of government, and the making of public policy in the economic sphere. Must be taken in a,b,c sequence.
- 300-9 (3,3,3) History of the United States.** A general survey of the political, social, and economic development of the United States. (a) 1492 to 1815, (b) 1815 to 1900, (c) 1900 to the present.
- 301-3 Laws: Comparative Legal Systems.** A comparison of the legal institutions and laws in the United States, Western Europe, South America, and Eastern nations. C
- 302-3 Law: Civil Rights.** The law protecting the civil liberties and rights of people. C
- 303-3 International Relations.** A study of world politics. The causes of international conflict and the conditions of peace. C
- 304-3 Law: History and Philosophy.** A study of the evolution and development of law beginning with the ancient and archaic periods. Greek law, Roman law, and English and American law. In addition, the historical development of legal philosophy is reviewed. C
- 311-3 Economic Development of the United States.** Emphasizes the underlying trends and forces of change that have led to our present economic structure, level of performance, and world position. Prerequisite: 211-9 (C); 101c or 211c (E).
- 312-3 Comparative Economic Systems.** A comparative study of the goals, structure, and operation of the major economic systems, such as capitalism, socialism, communism, and fascism. Emphasis upon basic systems of organization and control, and upon mixed economies, rather than upon the traditional compartments within which economic systems are sometimes put. Prerequisite: 211c (E).
- 313-3 Economics of War and Peace.** A study of relations between wartime and peacetime economies with specific reference to government controls, impact of mili-

- tary expenditures in "hot" and "cold" wars, and the reallocation of resources. C
- 314-3 Economic Analysis of the Agricultural Policies of the United States.** Emphasis on the underlying economic bases of agricultural policies and the effects of such policies on farmers, middlemen, and consumers. C
- 320-6 Modern Britain.** History, economics, government, and sociology of contemporary Britain (summer only, abroad). C
- 321-3 Socialization of the Individual.** A study of the emergent social process in which the native capacities of the infant are shaped and developed through interaction with significant others during infancy and childhood. C
- 323-3 East and West in the 20th Century—Origins and Prospects.** Study of the development since the late 19th century of basic internal forces such as industrialization, nationalism, socialism, and fascism in the U.S., Europe, and Asia, and the manner in which these forces have led to both conflict and co-operation between these geographical areas. C
- 325-3 Race and Minority Relations.** An analytical study of the status of racial, ethnic, and religious minorities in the United States. C
- 331-3 The American Educational Systems.** A comprehensive study of the nature and purpose of education in the United States and of how our schools are organized, financed, and conducted.
- * 333-3 Seminar in Problems of War and Peace.** Interdisciplinary topics in the general area of war and peace. C
- 341-3 Marriage.** An examination of marriage in various societies with an emphasis on the origins, changes, and present status of dating, courtship and marriage in the United States.
- 343-3 Geographical Basis of International Conflicts.** Examination of geographical factors of world political relations and conflicts during the inter-war and post-war periods. C
- 345-3 Introduction to American Foreign Policy.** An investigation of the means by which American foreign policy is formulated and executed and an analysis of the most significant challenges confronting America abroad.
- 351-6 (3,3) Geographic and Cultural Background of Developing Africa.** (a) The relation of geography to the culture of Africa, with emphasis on the place cultural and geographic factors have in the developing nations of Africa, (b) An introduction to the many diverse cultures of Africa from the Egyptian civilization to the Bushman hunters. Either part may be taken separately. E
- 354-3 Industrial Economic Geography.** Geographic resource relationship to the economic life of our nation, distribution of resources, industrial production, and the transportation of industrial products. E
- 356-3 The Consumer and the Economy.** A study of consumer motivations; institutional arrangements conditioned and affected by consumer economic behavior; and public policies and issues relevant to consumers. Prerequisite: 211a or consent of instructor. E
- 359-6 (3,3) Society and State: Social and Political Theories.** Historical survey of political and social theories from ancient times to the 20th century. The formation of concepts are traced from their origins in the early civilizations to their development in Western thought. Critical analyses of representative thinkers. Either part may be taken separately. E
- 369-3 The Contemporary Far East.** A study of relations between wartime and peacetime economies with specific references to government controls, impact of military expenditures in "hot" and "cold" wars, and the re-allocation of resources.
- 375-3 Alienation and Mass Society.** C
- 380-6 (3,3) East Europe: Cultural Heritage and Present Institutions.** (a) Cultural Heritage, (b) Present Institutions. An introduction to the European area east of the iron curtain with attention evenly divided among Russia, the Balkans, and Northern East Europe.
- 382-6 (3,3) History of Great Britain Since 1782.** The evolution of industrial democracy in Great Britain from the beginning of the Industrial Revolution to the present.

* Any one of 303, 313, or 343 leads to integrated seminar 333.

- 385-3 Contemporary Political Isms.** An advanced survey of Nationalism, Socialism, Communism, Liberal Democracy, Christian Socialism, Corporatism, Fascism.
- 390-3 Introduction to Comparative Government.** A comparative survey of the organization and operation of politics in modern states. C
- 392-3 Introduction to Latin American Government and Politics.** A general introduction to Latin American government on the institutionalized political expression of Latin American civilization and culture. Does not require a reading knowledge of Spanish or Portuguese. C

MAN'S INSIGHTS AND APPRECIATIONS (GSC)

- 100-3 Music Understanding.** Criteria for discriminative music listening as an asset to general culture. An examination of basic materials, techniques, and forms.
- 101-3 Art Appreciation.** Study of significant achievements in art related to Western culture and contemporary life.
- 102-3 Problems of Moral Decision.** An introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers of past and present. C
- 103-3 Masterpieces of Literature.** Reading in English, literary masterpieces of the Western world, to increase the student's competence in reading imaginative literature, to acquaint him with the great ideas and values of the best literature, and to train him to deal with literary materials in his writing. C
- 110-9 (3,3,3) An Introduction to Western Humanities.** A selection of great works expressing the aesthetic, moral, and religious values of Western man. Sets forth the critical vocabulary of six humanistic disciplines: art, music, philosophy, design, literature, and theater; provides some direct experience of each one; and calls attention to interrelations among the disciplines and between the humanities and other aspects of Western culture. Must be taken in a,b,c sequence. C
- 151-3 Introduction to Poetry.** Introduction to the enjoyment of poetry. Practice in techniques of critical reading and writing. E
- 152-3 Logic.** Study and practice in the analysis of verbal traps, relations between statements, deductive arguments, and inductive inferences. E
- 200-3 The Oral Interpretation of Literature.** Students participate in a dynamic analysis of literature stressing the creative role of the oral interpreter. Emphasis is on individual problems in understanding and communicating significant literary works.
- 201-3 Introduction to Drama.** Not a history of the drama. The class will read about a dozen plays, modern and ancient, and consider how various dramatic conventions and devices are used to give form and meaning to human experience. C
- 202-3 Introduction to Poetry.** A variety of poems, from the simpler to the more complex, are read and discussed. Emphasis is upon enjoyment and upon heightened insight into human experience. Devices of artistic form, such as imagery and meter, are discussed as they are involved with the substance they express, human actions, feelings, and attitudes, including the poet's satisfaction in giving artistic form to his material. C
- 203-3 Drama and the Arts of the Theater.** The study of drama as a literary type; the relationship with the theater audience, the role of the theater in Western culture and its relation to other creative arts.
- 204-3 Meaning in the Visual Arts.** A historically-oriented conception of the relationship between art and civilization which seeps through the examination of relevant examples of the visual arts to develop awareness of the great complexities of artistic motivation, the development of art styles, and the interaction between the artist and society. C
- 205-3 The Contemporary Environment.** A lecture-laboratory course designed to create a picture plane whereon a student may see some principles underlying architecture, visual communication, and other products of his physical and cultural environment. C
- 206-3 Foundation of Music.** Emphasis on the historical sequence of musical develop-

ment from primitive ages through the contemporary scene. An introduction to the materials of music, including application of basic skills to keyboard performance, is provided in studio sections. Two hours of lecture, one hour of studio each week. C

207-3 Philosophy of the Beautiful. A study of the structure and importance of the beautiful in nature, society, personality, and the arts. C

208-3 Logic and Meaning. A critical study of expressive, informative, and other modes of discourse, with emphasis on their roles in rational process. C

209-3 Modern Literature: Form and Idea. Designed to give the student an interest in and an understanding of the forms, themes, and values of modern American, British, and Continental literature. C

210-3 Introduction to Fiction. A study of the chief techniques of fiction and of some of the acceptable criteria for judging fiction. Readings in some of the masterpieces among American and European short story and novel writers. C

211-9 (3,3,3) An Introduction to Oriental Humanities. The literature, music, drama, visual art, and definitive cultural motifs of three great Asian traditions. (a) focuses on India, (b) on China, and (c) on Japan. May be taken in any sequence. C

251-9 (3,3,3) Literary and Philosophical Masterpieces. An introduction to great works of the Western heritage. (a) Introduction to the Hebraic, Greek, and Latin traditions: beginning with Genesis and concluding with Augustine. (b) The heroic and courtly traditions; the new learning of the Renaissance in Europe; beginning with Beowulf and concluding with Milton. (c) An introduction to literary and philosophical rationalism, romanticism, realism, and naturalism; beginning with Moliere and concluding with Nietzsche. May be taken in a,b,c sequence or by combining a,b or a,c with GSC 203 or 255. E

255-3 Music in History. Introduction to music history within history in general. E

301-3 Introduction to Semantics. The nature of language, the emotional and intellectual content; breaking down linguistic naivete and developing a consciousness of the motives in the rise of language. C

305-3 Contemporary French Drama. Study of French contemporary drama since 1930, to be read in translation, with emphasis on the piece a these, the Theatre libre, symbolist drama, and the drama of modern social problems. C

310-3 Religious Foundations of Western Civilization. Examination of the historical backgrounds and contemporary expressions of Jewish, Catholic, and Protestant thought. C

311-3 Philosophies and Religions of India. Historical and comparative study of Hindu, Jain, and early Buddhist thought and practice. C

312-3 Philosophies and Religions of the Far East. Historical study of the religious and secular thought of China and Japan; Confucianism, Taoism, and the varieties of Mahayana Buddhism. C

313-3 Folklore. The types of folklore, with extensive reading in American and European folklore: practice in collecting and classifying, and in the use of Thompson's index, etc. C

318-3 Modern British Literature. Contemporary British Fiction and Drama (Summer only—Oxford program). C

320-3 Greek Literature in Translation. A study of the masterpieces of Greek literature in translation. C

321-3 Revolution and Romanticism. English literature of the late 18th and early 19th century in relation to the social and philosophical crises of times with animadversions on the relevance to our own times. C

330-3 Classical Mythology. Study of the classical myths and their literary value. C

331-3 Latin Literature in Translation. Discussion of Latin literary works and their influence on later literature. C

335-3 Studies in Short Fiction. The development of the short story as an artistic expression, its techniques, and its versatility, from the early 19th century to the present.

340-3 Modern Art A: The Art of the 19th Century. The principal movements of the 19th century: neo-classicism, romanticism, realism, impressionism, and post-impressionism. The styles of David, Ingres, Delacroix, Corot, Courbet, Manet, Degas, Monet, Renoir, Seurat, Van Gogh, and Gauguin receive emphasis. C

341-3 Modern Art B: Art of the Early 20th Century 1890-1925. A study of modern

art as manifest in Fauvism, cubism, and expressionism. Emphasis on the artistic development of Cezanne, Matisse, Rouault, Picasso, Braque, Gris, Leger, Kirchner, and Kandinsky. C

342-3 Modern Art C: Art of the Mid 20th Century 1920-1945. Abstraction, later German expressionism, the school of Paris, and surrealism. Special attention to the work of de Chirico, Klee, Miro, Beckman, Chagall, Kokashka, Soutine, and late Matisse, Picasso, Braque, and Leger. C

345-3 World Literature. A study of the outstanding works representative of various types and of varying cultures and eras, showing the fundamentally unchanging nature and spirit of man. C

348-3 Photography and Cinema. The basic technology of photography and cinema. Their development as art forms and their uses in education and mass communications. Criteria for their evaluation and appreciation. C

351-12 (4,4,4) History of World Art. A study of painting, sculpture, and architecture from early to modern times, emphasizing the social and intellectual content of the major periods and significant styles. Prerequisite: 9 hours in GSC-2. E

354-6 (3,3) History of the Theater. A study of (a) primitive, Greek, medieval, and Italian Renaissance theater, (b) the theater since the Italian Renaissance. E

357-9 (3,3,3) Music History and Literature. Integrates the development of musical thought and literature from Greek and Roman periods through the Renaissance and continuing through the 20th century. Prerequisite: 255 or consent of instructor (E).

360-6 (3,3) Arts and Ideals in Famous Cities. A presentation of the chief art styles and aesthetic ideals of Western culture as they flowered in seven famous cities. A close study of selected masterworks of architecture, fine art, music, literature, and philosophy of art as expressions of men who shaped the physical faces and cultural lives of their cities. (a) 5th-century B.C. Athens, 13th-century Chartres, late 15th-century Florence, and early 16th-century Rome. (b) 18th-century London, 19th-century Paris, 20th-century New York. E

363-6 (3,3) Philosophy of Science. (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. May be taken in either a,b or b,a sequence, but a,b is preferable.

365-3 Shakespeare. The major works of William Shakespeare. C

381-3 Greek Philosophy. The thought of the pre-Socrates, Plato, and Aristotle. C

382-3 Graeco-Roman & Medieval Philosophies. Epicureanism, Stoicism, and medieval Christian thought. C

383-3 Early Modern Philosophy. Bacon, Hobbes, Descartes, Leibniz, Spinoza, and the British empiricists in the context of the scientific and general social outlook of the period. C

386-3 Early American Philosophy. From the colonial period to the Civil War. C

387-3 Recent American Philosophy. Thought of Howison, Royce, Peirce, James, Dewey, and others. C

ORGANIZATION AND COMMUNICATION OF IDEAS (GSD)

101-6 (3,3) English Composition. Basic rhetorical principles in expository writing. Must be taken in a,b sequence. Prerequisite: GSD 100 or satisfactory score on placement test.

103-3 Oral Communication of Ideas. The basic principles and techniques of oral communication as applied to everyday speech activities.

108-9 (3,3,3) Fundamentals of Mathematics. An introduction to mathematical concepts and reasoning presented at a level appropriate for university students who have had high school courses in intermediate algebra and plane geometry. Topics include the number system, college algebra, analytic geometry, probability and statistics. Must be taken in a,b,c sequence. C

110-3 Economic and Business Statistics. Elementary statistical concepts, including the nature of statistical methods, sampling, probability, frequency distributions, estimations, and hypothesis. May be taken as part c of the 108 sequence by economics and business students. C

112-9 (3,3,3) Introduction to Mathematics. Logical rules of deduction, the real number system, mathematical structures. Must be taken in a,b,c sequence. Prerequisite: Mathematics 100 or satisfactory score on placement test. **E**

114-9 (3,3,3) College Algebra and Trigonometry. For students who have had intermediate algebra and plane geometry in high school. Must be taken in a,b,c sequence, or b,c may be taken concurrently.

114d-3 Statistics. Descriptive statistics, probability distributions, sampling, problems of statistical inference, regression and correlation. Prerequisite: 114b. May be taken in lieu of 114c. **E**

120-9 (3,3,3) Elementary Chinese. Emphasis on development of reading skills. Must be taken in a,b,c sequence. **C**

123-9 (3,3,3) Elementary French. Open to students who have had no previous work in French. Must be taken in a,b,c sequence.

126-9 (3,3,3) Elementary German. Open to students who have had no previous work in German. Must be taken in a,b,c sequence.

130-9 (3,3,3) Elementary Greek. (a) Grammar is emphasized, (b,c) reading of a text, usually the New Testament. Must be taken in a,b,c sequence. **C**

133-9 (3,3,3) Elementary Latin. Open to students who have had no previous work in Latin. Must be taken in a,b,c sequence. **C**

136-9 (3,3,3) Elementary Russian. No previous knowledge of Russian required. Must be taken in a,b,c sequence.

140-9 (3,3,3) Elementary Spanish. Open to students who have had no previous work in Spanish. Must be taken in a,b,c sequence.

144-9 (3,3,3) Elementary Italian. Open to students who have had no previous work in Italian. Must be taken in a,b,c sequence. **E**

HEALTH AND PHYSICAL DEVELOPMENT (GSE)

Courses numbered 100-104 are for men; 110-114 are for women.

100-3 (1,1,1) Restricted Physical Education (Men).

101-3 (1,1,1) Swimming (Men). (a) Beginning swimming, (b) Intermediate swimming, (c) Diving.

101d-1 Life Saving (Men). **E**

102-1 Physical Fitness (Men).

103-3 (1,1,1) Dance (Men). (a) Square, (b) Folk, (c) Social.

104-(1 per activity) Individual and Team Activity (Men). (a) Archery, (b) Badminton, (c) Basketball, (d) Bowling, (e) Golf, (f) Soccer, (g) Speedball, (h) Tennis, (i) Volleyball, (j) Softball, (k) Horseback riding, (m) Fencing, (n) Cross country, (p) Ice Skating, (q) Fly and bait casting, (r) Stunts and tumbling, (s) Gymnastics, (t) Touch football, (u) Wrestling, (v) Personal defense.

104-1 Individual and Team Activity (Men). (w) Judo. **C**

110-3 (1,1,1) Restricted Physical Education (Women).

111-3 (1,1,1) Swimming (Women). (a) Beginning Swimming, (b) Intermediate Swimming, (c) Diving.

111d-1 Life Saving (Women). **E**

112-1 Basic Body Movement (Women).

113-5 (1,1,1,1,1) Dance (Women). (a) Square, (b) Folk, (c) Social, (d) Beginning Contemporary, (e) Intermediate Contemporary.

114-(1 per activity) Individual and Team Activity (Women). (a) Archery, (b) Badminton, (c) Basketball, (d) Bowling, (e) Golf, (f) Soccer, (g) Speedball, (h) Tennis, (i) Volley Ball, (j) Softball, (k) Horseback riding, (m) Fencing, (n) Hockey.

201-3 Healthful Living. Personal and community health. Presents scientific health information as a basis for developing wholesome health attitudes and practices.

Notes pertaining to GSD 120 through 144:

1. Sections of conversation for 1 hour of credit are available with each of these languages, but on an elective basis.

2. Students having had high school language training should see the Department of Foreign Languages for placement.

3

Curriculum Guides

THIS BULLETIN contains four-year curriculum guides showing the distribution of General Studies courses and courses for particular fields of interest. A curriculum guide is provided for the student of undecided interest. The student who follows one of these curriculum guides may fill out and submit his schedule to the sectioning center of the Registrar's Office. If the student deviates from the curriculum guide, he must then see a general adviser. In the curriculum guides, most General Studies courses are arranged as one-year sequences. The student is therefore encouraged to think of his registrations in terms of year-long increments in the various areas.

If a curriculum is called "preprofessional" it does not lead to a degree at Southern Illinois University. Students enrolled in such courses of study transfer to professional schools after a year or more.

These guides show how the various courses may be arranged by quarter and year. However, they are intended as guides *only* and should be varied to meet individual needs. Substitutions are possible, and often necessary.

JOB OPPORTUNITIES

Many students will be concerned about the future job opportunities in a particular field, even while completing the initial stages of General Studies. A student may obtain from his adviser a sheet showing the job possibilities after graduation from the University.

Undecided

All Academic Units at Carbondale

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Elective	<u>3</u>	Elective	<u>3</u>	Elective	<u>3</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE 201	3	Elective	3	Elective	3
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	16		16		15

Accounting

School of Business

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a, or		GSD 108b, or		GSD 110	3
114a	3	114b	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	<u>0</u>	USAF	<u>0</u>		<u>17</u>
	16		16		

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	Econ 214	3	Econ 215	3
USAF	1	USAF	1	USAF	0
Acct 251a	<u>4</u>	Acct 251b	<u>4</u>	Acct 251c	<u>4</u>
	17		17		16

Third and Fourth Years, Not Arranged by Quarter

GSA-3	6	Acct 331, 341,		Mgt 320, 340	9
GSB 311	3	351a,b, 456	20	Mgt 371 & 372,	
GSB-3	3	Acct 432, 442,		or 373	8
GSC-3	6	453 ¹	8	Mgt 481	3
		Acct 355, 415,		Mktg 225, 325	7
		458, 459,		Electives	11
		461 ²	3-4		
		Econ 315	4		

¹Choose at least two.

²Choose one unless three courses are chosen above.

Agricultural Education (Vocational)

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a ¹	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	Chem 101b ²	1	Chem 101c ²	1
GSC-1	3	GSB-1 (waive)	0	GSB-1 (waive)	0
GSD 101a	3	GSC-1	3	GSC-1	3
GSD 108a or 114a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 108b or 114b	3	GSD 108c or 114c	3
FC 000	0	GSE PE	1	FC 000	0
USAF	0	FC 000	0	USAF	0
AgI 114	4	USAF	0	AnI 105	4
	<u>17</u>	PlI 103	<u>4</u>		<u>18</u>
			18		

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSE PE	1	GSC-2	3
USAF	1	USAF	1	USAF	0
AnI 315	4	AgI 210 ³	2	PlI 309	4
	<u>17</u>	Ag elective	<u>4</u>		<u>16</u>
			17		

Third Year

GSE 201	3	GSB 331	3	GSA-3	3
AgI 375	3	AgI 373 ⁵	5	AgI 215 ⁶	4
AgI 350	5	Ag elective	4	PlI 264 or For 360	4
Eng 391 ⁴	3	SEd 310	4	AgI 311 ⁷	3
Guid 305	4			GSC-2	<u>3</u>
	<u>18</u>		<u>16</u>		17

Fourth Year

AgI 312a ⁸	2	GSA-3	3	GSB 314 ¹¹	3
AgI 309	5	GSC-3	3	GSC-3	3
AgI 312b ⁹	10	Ag elective ¹⁰	12	Ag elective	4
	<u>17</u>		<u>18</u>	Ag elective	4
				Ed elective ¹²	<u>4</u>
					18

¹If noncredit Math 106 is required, delay GSA 101 until winter.²Highly recommended.³Taught winter quarter only.⁴May be omitted through proficiency exam.⁵Taught winter and alternate summers.⁶Taught spring and alternate summers.⁷Taught spring only.

⁸Taken in summer prior to student teaching.

⁹Student teaching in either fall or winter quarter.

¹⁰Must have 12 hours in four fields and total of 72 hours technical agriculture.

¹¹Will satisfy three hours of Ag Economics (Technical Ag).

¹²Selected with counselor.

Agriculture (General)

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a ¹	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	GSB-1(waive)	0	GSB-1 (waive)	0
GSC	3	Chem 101b ³	1	Chem 101c ³	1
GSD 101a	3	GSC	3	GSC	3
GSD Math ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD Math	3	GSD Math	3
FC 000	0	GSE PE	1	FC 000	0
USAF	0	FC 000	0	USAF	1
Ag ²	4	USAF	0	Ag ²	4
		Ag ²	4		
	<u>17</u>		<u>18</u>		<u>18</u>

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	USAF	1	GSE PE	1
Ag ⁴	4-8	Ag ⁴	4-8	USAF	0
				Ag ⁴	4-8
	<u>14-18</u>		<u>14-18</u>		<u>14-18</u>

Third Year

GSA-3	3	GSA-3	3	GSE 201	3
GSB-3	3	GSB-3	3	GSC-3	3
GSC-3	3	Ag, sciences, &		Ag, sciences, &	
Ag, sciences, &		electives ⁴	8-12	electives ⁴	8-12
electives ⁴	5-9				
	<u>14-18</u>		<u>14-18</u>		<u>14-18</u>

Fourth Year

Ag ⁴ &		Ag ⁴ &		Ag ⁴ &	
electives	<u>14-18</u>	electives	<u>14-18</u>	electives	<u>14-18</u>
	14-18		14-18		14-18

¹If noncredit Math 106 is required, delay GSA 101 until winter. A student with a background and interest in the sciences and with an ACT score of 75 in the National Sciences is recommended to:
 (a) take GSD 114, and (b) substitute Chem 111a for GSA 101b, or
 (c) after completion of GSA 101b with a grade of B or better, take Chem 112b and 305.

²At least one of the following courses in agriculture is to be selected from a different department each quarter: AnI 105, 125, 231; AgI 114; PlI 103.

³Required unless waived in writing by departmental chairman.

⁴Consult Undergraduate Catalog and appropriate counselors for selection of courses. A total of 12 hours in each of three departments, AgI, AnI, and PlI, and one course in Forestry or agricultural engineering required.

Agricultural Industries
(Agricultural Economics)

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a ¹	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	Chem 101b ²	1	Chem 101c ²	1
GSC	3	GSB-1 (waive)	0	GSB-1 (waive)	0
GSD 101a	3	GSC	3	GSC	3
GSD 108a, or		GSD 101b	3	GSD 103	3
114a	3	GSD 108b, or		GSD 110	3
GSE PE	1	114b	3	FC 000	0
FC 000	0	GSE PE	1	USAF	1
USAF	0	FC 000	0	PLI 103	4
AgI 114	4	USAF	0		
	<u>17</u>	AnI 105, or 321	4		
			<u>18</u>		<u>18</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c, or 200	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSE 201	3	Econ 214	3	GSE PE	1
USAF	1	USAF	1	Econ 215	3
AnI 315	4	PLI 309	4	USAF	0
	<u>17</u>		<u>17</u>	AgI 350	5
					<u>18</u>

Third Year

GSB 314	3	GSA-3	3	GSA-3	3
GSC 209, 202,		GSB-3	3	GSC 208	3
or 203	3	GSC 200, 204,		Ag elective	4
AgI 354	3	205, or 206	3	Elective	5-6
Electives	3-4	Ag elective	4		
Acct 250	4	Elective	4		
	<u>16-17</u>		<u>17</u>		<u>15-16</u>

Fourth Year

GSC-3	3	GSC-3	3	AgI elective	4
AgI 456a	3	AgI elective	4	Ag elective	4
Ag elective	4	Electives	9	Electives	8
Electives	<u>6</u>		<u>16</u>		<u>17</u>
	<u>16</u>				

300-level GS courses and electives are to be selected in consultation with departmental counselors.

¹If noncredit Math 106 is required, delay GSA 101 until winter

²Required unless waived in writing by departmental chairman.

Agricultural Industries
(Agricultural Engineering Services)

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a ¹	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	Chem 101b ²	1	Chem 101c	1
GSC-1	3	GSB-1 (waive)	0	GSB-1 (waive)	0
GSD 101a	3	GSB 211a	3	GSB 211b	3
GSD 108a, or		GSD 101b	3	GSD 103	3
114a	3	GSD 108b, or		GSD 108c, or	
GSE PE	1	114b	3	114c	3
FC 000	0	GSE PE	1	FC 000	0
USAF	0	FC 000	0	USAF	1
AgI 114	4	USAF	0	AnI 105	4
		PlI 103	<u>4</u>		
	<u>17</u>		18		<u>18</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211c	3	GSC-1	3	GSC-2	3
GSC-1	3	GSE PE	1	USAF	0
USAF	1	USAF	1	GSE 201	3
AgI 375	3	AnI 315	4	Mktg 337	4
AgI 354	<u>3</u>	Elective	<u>4</u>	E T 263a	<u>4</u>
	16		16		17

Third Year

GSA-3	3	GSA-3	3	GSB-3	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-2	3	GSC-2	3	PlI 309	4
AgI 306	2-5	AgI 373	5	Ag elective	4
Ag electives	<u>3-6</u>	Bus elective	<u>4</u>	Bus elective	<u>3</u>
	14-17		18		17

Fourth Year

GSB-3	3	GSC-3	3	Ag elective	7
GSC-3	3	AgI 374, or 378	4	Electives	8
AgI 378, or 473	4	Electives	8		
Bus electives	<u>6</u>				
	16		<u>15</u>		<u>15</u>

300-level GS courses and electives are to be selected in consultation with departmental counselors.

¹If noncredit Math 106 is required, delay GSA 101 until winter.

²Required unless waived in writing by departmental chairman.

Animal Industries

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b ³	3	GSA 101c	3
GSC-1	3	Chem 101b	1	Chem 101c	1
GSD 101a	3	GSC-1	3	GSC-1	3
GSD Math ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD Math	3	GSD Math	3
FC 000	0	GSE PE	1	FC 000	0
USAF	0	FC 000	0	USAF	1
AnI 105, or 231 ²	4	USAF	0	AnI 125, 231, or PII 103 ²	4
		AnI 125, 231, or AgI 114 ²	4		
	<u>17</u>		<u>18</u>		<u>18</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	USAF	1	GSE PE	1
AnI 332, or Ag elective	4	AnI 315, or Ag elective	4	USAF	0
	<u>17</u>		<u>17</u>	Ag elective	4
					<u>17</u>

Third Year

GSA 301	4	GSA-3	3	GSC-3	3
GSB-3	3	GSB-3	3	AnI, or Ag elective ⁴	14
GSE 201	3	GSC-3	3		
AnI, or Ag elective ⁴	7-8	AnI, or Ag elective	8-9		
	<u>17-18</u>		<u>17-18</u>		<u>17</u>

Fourth Year

Ag and other electives	<u>14-18</u>	Ag and other electives	<u>14-18</u>	Ag and other electives	<u>14-18</u>
	14-18		14-18		14-18

¹If noncredit Math 106 is required, delay GSA 101 until winter. Students with high enough mathematics scores should take GSD 114.

²Two of AnI 105, 125, and 231 are required. AgI 114 or 354 and PII 103 are also required. AgI 354 is prerequisite to AgI 456b and 456d.

³Chem 111 may substitute for GSA 101b if student has grade of "B" or better in GSA 101a. It is then possible to take Chem 112 and 305 rather than GSA 101c. This is recommended for those planning to pursue graduate study.

⁴A total of 48 hours in Animal Industries required.

Anthropology

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE	1	GSE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE 201	3	Elective	3	Elective	3
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	16		16		15

Third Year

GSA-3	3	GSA 313	3	GSC-3 ¹	3
GSB 303	3	GSB 312	3	GSC-3 ¹	3
Anth 300	3	Anth 303	3	Anth 304	3
Anth 306a, or		Anth 306b, or		Anth 306c, or	
305a ²	3	305b ²	3	305c ²	3
Anth 404	<u>4</u>	Anth 400	<u>4</u>	Anth 409	<u>4</u>
	16		16		16

Fourth Year

Anth 306a, or		Anth 306b, or		Anth 306c, or	
305a ²	3	305b ²	3	305c ²	3
Anth 401	4	Anth 405	4	Anth 408	4
Electives ³	<u>11</u>	Electives ³	<u>11</u>	Electives ³	<u>11</u>
	18		18		18

¹Any two of GSC 311, GSC 312, GSC 382, GSC 383.²Offered alternate years.³14 hours of electives to be in Anthropology.

Applied Science

School of Technology

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSD 103	3
GSC-1	3	GSD 101b	3	USAF	0
GSD 101a	3	GSE PE	1	USAF	1
USAF	0	USAF	0	FC 000	0
FC 000	0	FC 000	0	Chem 111c	5
Math 150a ¹	5	Chem 111b ²	5	Math 252a	5
Tech 101a	<u>3</u>	Math 150b	<u>5</u>	Tech 101b	<u>3</u>
	17		17		17

Second Year

GSB 101a	3	GSB 11a	3	GSB 211b	3
GSC-1	3	GSC-1	3	GSC-2	3
GSE PE	1	USAF	0	GSE PE	1
USAF	0	USAF	1	GSE 201	3
USAF	1	Engr 222	3	USAF	0
Math 252b	4	Engr 260a	3	Engr 260b	3
Phys 211a	<u>5</u>	Phys 211b	<u>5</u>	Phys 211c	<u>5</u>
	17		18		18

Third Year

GSA-2	3	GSA-2	3	GSA-2	3
ApS 450	5	GSC-2	3	GSB 211c	3
Engr 260c	3	ApS 300	5	ApS 470	5
Engr 300a	3	Engr 300b	3	Engr 300c	3
Engr 331a	<u>4</u>	Engr 331b	<u>4</u>	Engr 331c	<u>4</u>
	18		18		18

Fourth Year

GSA 358a	*	GSA 358b	*	GSB-3	3
GSB-3	3	GSC-3	3	GSC-3	3
GSC-2	3	Elective area	13	Elective area	10
Engr 412a	3				
Elective area	<u>9</u>				
	18		16		16

¹Students may qualify for advanced standing in GSD 114a,b,c, and be permitted to enroll in Math 150a.

²Students who have not had chemistry in high school must take Chem 111a before registering for Chem 111b.

*Students who have completed Phys 211a,b,c, should request advanced standing for GSA 358a,b.

during his first quarter as a freshman if his high school background and the advanced mathematics placement test indicate his beginning with a course higher than GSD 114a.

²Phys 211a (or 206a) is required for mathematics concentration; 211b,c (or 206b,c) are recommended.

³The Department of Mathematics requires a foreign language of its students and recommends that this language be French, German, or Russian. This requirement can also be met by passing an examination or by 3 hours of credit in the intermediate level of one foreign language.

⁴Two professional education courses (6-8 q.h.) chosen from the list in the Undergraduate Catalog, Department of Secondary Education.

Each student with a concentration in mathematics must make an appointment with a member of the mathematics faculty to discuss the choice of mathematics courses to be taken during his junior and senior years.

FIRST YEAR OPTIONS: Foreign language sequence; courses in a possible secondary concentration.

SECOND YEAR OPTIONS: Physics; foreign language sequence; General Studies first level sequences not completed; courses in secondary concentration.

Art (Art Education)

School of Fine Arts

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1 (waive)	0	GSC-1 (waive)	0	GSC-1 (waive)	0
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE-1	1	GSE-1	1	GSE-1	1
USAF	0	USAF	0	USAF	1
FC 000	0	FC 000	0	FC 000	0
Art 100	<u>6</u>	Art 100	<u>6</u>	Art 100	<u>6</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
USAF	1	USAF	1	GSE-2	3
Art 200	6	Art 200	6	USAF	0
Art 225	3	Art 226	3	Art 200	6
	<u>16</u>		<u>16</u>	Art 227	<u>3</u>
					18

Third Year

GSA-3	3	GSA-3	3	Art History	3
GSC-2	3	GSC-2 (art)	3	GSC-2	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
Art 306	3	Art 307	3	Art 308	3
Art 302	<u>4</u>	Art 231	<u>4</u>	Art 385	<u>4</u>
	16		16		16

Fourth Year

GSB-3	3	GSB 331	3	Student	
GSC-3 (art)	3	GSC-3 (art)	3	teaching	12
SEd 310	4	Guid 305	4	SEd 440	4
IM 417	3	Guid 422	3		
Art elective	<u>3</u>		<u>13</u>		<u>16</u>
	16				

A concentration in Art is available in either the College of Liberal Arts and Sciences or the School of Fine Arts. Such a concentration taken in either academic unit leads to a Bachelor of Arts degree. In the School of Fine Arts, specializations include painting, prints, sculpture, crafts, art history, and art education. A concentration in art education may also be pursued in the College of Education. Students are urged to select their area of specialization by the end of the sophomore year. All students with a concentration in the School of Fine Arts are required to complete a minimum of 24 hours work in art history except for those who specialize in art education. Those in the College of Liberal Arts and Sciences must specialize in art history. Students interested in concentrating in art with a specialization in art history should consult the department chairman.

Art (Studio or Crafts)

School of Fine Arts

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1 (waive)	0	GSC-1 (waive)	0	GSC-1 (waive)	0
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE-1	1	GSE-1	1	GSE-1	1
USAF	0	USAF	0	USAF	0
FC 000	0	FC 000	0	FC 000	0
Art 100	<u>6</u>	Art 100	<u>6</u>	Art 100	<u>6</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
USAF	1	USAF	1	GSE-2	3
Art 200	6	Art 200	6	USAF	0
Art 225	3	Art 226	3	Art 200	6
	<u>16</u>		<u>16</u>	Art 227	<u>3</u>
					18

Third Year

GSA-3	3	GSA-3	3	Art 345	3
GSC-2	3	GSC-2 (art)	3	GSC-2	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
Art	<u>7</u>	Art	<u>7</u>	Art	<u>7</u>
	16		16		16

Fourth Year

GSB-3	3	GSB-3	3	Art	16
GSC-3 (art)	3	GSC-3 (art)	3		
Art	<u>10</u>	Art	<u>10</u>		
	16		16		<u>16</u>

A concentration in Art is available in either the College of Liberal Arts and Sciences or the School of Fine Arts. Such a concentration taken in either academic unit leads to a Bachelor of Arts degree. In the school of Fine Arts, specializations include painting, prints, sculpture, crafts, art history, and art education. A concentration in art education may also be pursued in the College of Education. Students are urged to select their area of specialization by the end of the sophomore year. All those with art concentrations in the School of Fine Arts are required to complete a minimum of 24 hours work in art history except for those who specialize in art education. Those with art concentrations in the College of Liberal Arts and Sciences must specialize in art history. Students interested in concentrating in art with a specialization in art history should consult the department chairman.

Biological Science

College of Liberal Arts and Sciences

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a or 114a	3	GSD 108b or 114b	3	GSD 108c or 114c	3
GSE-1	1	GSE-1	1	GSE-1	1
Chem 111a ¹	5	Chem 111b	5	Chem 111c	5
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	18		18		19

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201b ²	3	GSB 201a ²	3	GSB 201c ²	3
GSB-3 (Govt or Am Hist)	3	GSB-3	3	GSC-2	3
GSC-2	3	GSC-2	3	GSC-3	3
GSE 201	3	Micr 301	5	Micr 302	5
USAF	<u>1</u>	USAF	1	USAF	0
	16		18		17

Third Year

GSC-3	3	GSA 312	3	GSD FL ³ or	
GSD FL ³ or		GSD FL ³		Bot 470	3-4
Guid 305	3-4	or SED	3-4	Biol Sci Seminar	0
Zool 102	5	Zool 103	5	Bot 313	3
Bot 300	3	Bot 301	3	Zool 402 or 403	4
GSA 301 or		Bot 320 or		Elective or	
Phsl 315a	<u>4-5</u>	Phsl 315b	<u>5</u>	Phsl 315c	<u>3-5</u>
	18-20		19-20		13-16

Fourth Year

Zool 310 or		Bot 341 or		Electives ⁶	4
elective ⁴	3-5	elective ⁴	3-5	SEd 352 ⁷	12
Bot 315 or		Biol Sci Seminar	0		
Zool 401	4-5	Biol electives ⁵	3-5		
Biol Sci Seminar	0	Electives ⁶	6-12		
Biol electives ⁵	3-5				
Electives ⁶	<u>4</u>				
	14-19		12-21		16

¹Students with insufficient chemistry background from high school should take GSA 101a and 101b, plus Chem 101b; with acceptable background should start with Chem 111b.

²GSB 211a,b,c is acceptable.

³Foreign Language is required in College of Liberal Arts and Sciences.

⁴Ecology requirement of Bot 341 or Zool 310.

⁵Select courses from Botany, Microbiology, Physiology, and Zoology to complete a minimum of 72 hours in biology.

⁶For a standard teaching certificate, elect the appropriate required courses (30 hours).

⁷Student should expect to be off campus for this assignment.

Botany

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a (waive)	0	GSA 101a (waive)	0	GSA 101a (waive)	0
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a or 114a	3	GSD 108b or 114b	3	GSE 201	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
GSA 101b	3	GSA 101c	3	Chem 350	4
Chem 101b	<u>1</u>	Chem 101c	<u>1</u>		
	17		17		18

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD FL	3	GSD FL	3	GSD FL	3
USAF	1	USAF	1	USAF	0
Electives	<u>4-5</u>	Electives	<u>4-5</u>	Electives	<u>4-5</u>
	17-18		17-18		16-17

Third Year

Bot 300	3	Bot 301	3	GSA 340	3
Bot 315	4	Bot 320	5	Bot 313	3
GS-3 ¹	6	GS-3 ¹	6	GS-3 ¹	3
Secondary concentration or elective ²	3-4	Secondary concentration or elective ²	3-4	Secondary concentration or elective ²	6-7
	16-17		17-18		15-16

Fourth Year

Bot 341	3	Bot elective	4	Bot elective	4-5
Bot 400	5	Bot 449	3	Bot elective	4-5
Secondary concentration	4-5	Bot elective	4-5	Secondary concentration	4-5
Elective	<u>3-4</u>	Secondary concentration	4-5	Elective	<u>3</u>
	15-17		15-17		15-18

¹GS is GSA, 3 hrs; GSB, 6 hrs; GSC, 6 hrs in the junior year.

²Students in the College of Education must use the elective for the education courses required.

Business Teacher Education

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD-1	3	GSD-1	3	GSD-1	3
GSD Math	3	GSD Math	3	GSD 110	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE-2	3	GSB 201c	3	USAF	0
USAF	1	USAF	1		

Third Year

GSA-3	3	GSA-3	3	GSB-3	3
GSB-3	3	GSC-3	3	GSC-3	3

Professional Education Courses (Minimum of 34 hours required). Each student will take the following professional education courses: Guid 305-4; SEd 310-4, 352-12 or 16. Two of the following: Guid 422a-4; EdAd 355-4; IM 417-4. Two of the following: Sec 403-3, 404-3, 405-3, 406-4, 408-3.

Accounting, Business Administration, Economics, and Secretarial Courses (Minimum of 54 hours required). Some of these courses may be taken in the sophomore year along with General Studies.

Department of Secretarial and Business Education Courses. All business teacher trainees will take each of the following courses or their equivalents: Acct 251a; Mgt 170; Mktg 225; Sec 201a.

All business teacher trainees will prepare to teach in at least four subject matter areas within the field of business education. For specific information concerning these teaching areas and the subjects to be taken in each area, the student should consult with the business teacher education academic adviser or with a faculty member of the Department of Secretarial and Business Education.

Business teacher education students who elect to prepare to teach in the stenographic and secretarial area also prepare themselves for executive secretarial positions in business. Therefore, they will have job opportunities in two fields upon graduation.

Chemistry

College of Education

(With teaching areas in Mathematics and Physics)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>	<u>Summer</u>	<u>Hours</u>
GSA 101a		GSA 101b		GSA 101c		GSA 201a	3
(waive)	0	(waive)	0	(waive)	0	GSB 201a	3
GSB 101a	3	GSB 101b	3	GSB 101c	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3		
GSD 114a	3	GSD 114b	3	GSD 114c	3	GSE 201	3
GSE PE	1	GSE PE	1	GSE PE	1	Math 150a	5
FC 000	0	FC 000	0	FC 000	0		
USAF	0	USAF	0	USAF	1		
Chem 111b	<u>5</u>	Chem 111c	<u>5</u>	Chem 235	<u>5</u>		
	15		15		16		17

Second Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSC-1	3	USAF	1	GSA 201b	3
USAF	1	Chem 305b	5	GSB 201c	3
Chem 305a	4	Math 252a	5	GSC-1	3
Math 150b	5	Phys 206b	5	USAF	0
Phys 206a	5			Math 252b	4
				Phys 206c	<u>5</u>
	18		16		18

Third Year

GSC-2	3	GSB 201b	3	GSD 126c	3
GSD 126a	3	GSC-2	3	SEd 310	4
Guid 305	4	GSD 126b	3	Chem elective	3
Math 320a	3	Math elective	3	Math 311	3
Chem 460	<u>5</u>	Phys elective	<u>5</u>	Phys elective	<u>5</u>
	18		17		18

Fourth Year

GSA 201c	3	GSA-3	3	GSA-3	3
GSB 331	3	GSB-3	3	GSC-3	3
GSC-2	3	GSC-3	3	SEd 352	12
SEd 315	3	Guid 422a	4		
SEd 440	3	IM 417	4		
Chem elective	<u>3</u>				
	18		17		18

If a student enters without a year of high school chemistry, he must first take Chem 111a, then take Chem 235 during the first summer.

Physics electives must include two of the following courses: 300, 310, 312.

Chemistry electives must include a minimum of 7 quarter hours taken from the following list of courses: 447, 471, 490, 350 or 451 a,b,c.

The student must have a minimum of 30 hours in Education courses, including the above courses in Guidance and Secondary Education plus electives taken from the following list: Guid 422a, SEd 440, EdAd 355, IM 417, SEd 407, AgI 311, IEd 408, Art 308, HEED 310.

Chemistry (A.C.S. approved) College of Liberal Arts and Sciences
(A secondary concentration in Mathematics)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a (waive)	0	GSA 101b (waive)	0	GSA 101c (waive)	0
GSB 101b	3	GSD 101b	3	GSC-1	3
GSD 101a	3	GSD 114b	3	Math 150a	5
GSD 114a	3	GSD 114c	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	0	USAF	0	Chem 235	5
Chem 111b	<u>5</u>	Chem 111c	<u>5</u>		<u>15</u>
	15		15		

Second Year

Chem 341a	5	Chem 341b	5	GSC-1	3
USAF	1	USAF	1	USAF	0
Math 150b	5	Math 252a	5	Chem 341c	5
Phys 206s (211a)	5	Phys 206b (211b)	5	Phys 206c (211c)	5
	<u>16</u>		<u>16</u>	Math 252b	<u>4</u>
					17

Third Year

GSB 101a	3	GSA 201b	3	GSB-2	3
GSC-2	3	GSB-2	3	GSC-2	3
GSD 126a	3	GSD 126b	3	GSD 126c	3
Chem 461a	4	Chem 461b	4	Chem 461c	4
Math 305a	<u>3</u>	Math 305b	<u>3</u>	Math elective	<u>3</u>
	16		16		16

Fourth Year

GSA 201c	3	GSA-3	3	GSA-3	3
GSB-2	3	GSB-3	3	GSB-3	3
GSC-2	3	GSC-3	3	GSC-3	3
Chem 411	4	Chem 433	3	GSE 201	3
Chem 432a	<u>4</u>	ACS elective	<u>3</u>	Elective	<u>3</u>
	17		15		15

The B.A. without A.C.S. approval can be obtained by following the above schedule. In this case Chem 460 can be substituted for Chem 461a,b,c. Also there is a greater choice of chemistry courses during the senior year.

If a student enters without a year of high school chemistry, he must first take Chem 111a, then take Chem 235 during the first summer.

The A.C.S. electives include the following Chemistry courses: 412, 432b, 444, 451a,b,c, 464, 496. One of the electives must be a laboratory course.

Chemistry College of Liberal Arts and Sciences
 (Secondary concentration in Physics)
 (Teaching Certificate in Chemistry and Physics)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a (waive)	0	GSA 101b (waive)	0	GSA 101c (waive)	0
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a	3	GSC-1	3	GSD 103	3
GSD 114a	3	GSD 101b	3	GSD 114c	3
GSE PE	1	GSD 114b	3	GSE PE	1
FC 000	0	GSE PE	1	FC 000	0
USAF	0	FC 000	0	USAF	1
Chem 111b	5	USAF	0	Chem 235	5
		Chem 111c	5		
	<u>15</u>		<u>18</u>		<u>16</u>

Second Year

GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-1	3	GSC-1	3	GSC-2	3
USAF	1	USAF	1	USAF	0
Chem 341a	5	Chem 341b	5	Chem 341c	5
Phys 206a	5	Phys 206b	5	Phys 206c	5
	<u>17</u>		<u>17</u>		<u>16</u>

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSC-2	3	GSC-2	3	GSC-3	3
GSD 126a	3	GSD 126b	3	GSD 126c	3
Guid 305	4	Elective	3	Chem elective	3
Chem 460	5	Phys elective	5	Phys elective	3
	<u>18</u>		<u>17</u>		<u>17</u>

Fourth Year

GSA-3	3	GSA-3	3	GSB-3	3
GSB-3	3	Ed elective	3	GSE 201	3
GSC-3	3	Ed elective	3	SEd 352	12
SEd 310	4	SEd 315	3		
Elective	3	Chem elective	4		
	<u>16</u>		<u>17</u>		<u>18</u>

If a student enters without a year of high school chemistry, he must first take Chem 111a, then take Chem 235 during the first summer.

Chem electives must include a minimum of 7 quarter hours taken from the following list of courses: 444, 446, 447, 490, 471, 350, or 451a,b,c.

Phys electives must include two of the following courses: 300, 310, 312.

The B.A. degree without the teaching certificate can be obtained by following the above schedule. In this case the courses in Education electives, Guidance, and Secondary Education can be substituted by other electives.

Design

School of Fine Arts

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101	3	GSD 102	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Des 100	<u>5</u>	Des 100	<u>5</u>	Des 100	<u>5</u>
	18		18		19

Second Year

GSA-1	3	GSA-1	3	GSA-1	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	USAF	1	USAF	0
Des 200	2	Des 200	2	Des 200	2
Des 215	4	Des 215	4	Des 215	4
Des 275	<u>4</u>	Des 275	<u>4</u>	Des 275	<u>4</u>
	20		20		19

Third Year

GSA-2	3	GSA-2	3	GSA-2	3
GSE 201	3	GSB-3	3	GSB-3	3
Des 300	2	Des 300	2	Des 300	2
Des 366	5	Des 366	5	Des 366	5
Des 375	<u>5</u>	Des 375	<u>5</u>	Des 375	<u>5</u>
	18		18		18

Fourth Year

GSA-3	3	GSA-3	3	GSC-3	3
Des 390	2	GSC-3	3	Des 400	2
Des 400	2	Des 400	2	Des 465F	5
Des 465F	5	Des 465F	5	Des 465G	5
Des 465G	<u>5</u>	Des 465G	<u>5</u>		
	17		18		15

Transfer students or students wishing a concentration in Design after completion of three or more quarters of General Studies should confer with the Department of Design Chairman to plan an appropriate course of study.

Early Childhood Education

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC 100 ¹	3	GSC 101	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
Mus 040	1	Mus 040	1	Mus 040	1
		Elective	<u>3</u>	Elective	<u>3</u>
	<u>14</u>		<u>17</u>		<u>17</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 209, 202, or 203	3	GSC 204, 205, 206, or 200	3	GSC 201, 207, 208, or 210	3
GSD 108a	3	GSD 108b	3	GSD 108c	3
GSE 201	3	Eng 391 or		Guid 305	4
Sec 241	<u>1</u>	exemption	<u>3</u>		
	<u>16</u>		<u>15</u>		<u>16</u>

Third Year

GSA-3	3	GSA-3	3	IEd 302	4
GSB 300b	3	GSB 300c	3	Govt 300	4
GSC-3	3	GSC-3	3	ElEd 337	4
ElEd 316	4	ElEd 309	3	PEW 319	4
Math 210	<u>4</u>	Mus 300b	<u>3</u>		
	<u>17</u>		<u>15</u>		<u>16</u>

Fourth Year

ElEd 350b or EdAd 355 ³	4	ElEd 350b or electives	16	ElEd 350b or electives	16
Art 300	4				
Electives	<u>8</u>				
	<u>16</u>		<u>16</u>		<u>16</u>

¹Both GSC 100 and 101 are required for concentrations in early childhood education.

²Foreign language may be elected instead of math, but six hours of math are required for certification.

³Not required if GSB 331 was taken.

⁴A 12-hour area of interest should be selected.

Economics

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 108a, or		GSD 108b, or		GSD 110	3
114a	3	114b	3	GSD 103	3
GSD 101a	3	GSD 101b	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	<u>0</u>	USAF	<u>0</u>		<u>17</u>
	16		16		

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 211a	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	Econ 214	3	Econ 215	3
GSD FL	3	GSD FL	3	GSD FL	3
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	16		16		15

Third Year

GSA-3	3	GSA-3	3	Econ 330	4
GSB 311 or *	3	GSB 312 or *	3	Econ 440	4
GSC-3	3	GSC-3	3	Elective	3
Econ 310	4	Econ 315	4	Elective	5
Elective		Elective			

Fourth Year

Econ 441	4	Econ*	Econ or Elective*
Econ*		Econ or elective*	Elective
Elective		Elective	Elective
Elective		Elective	Elective

*In addition to GSB 211a, GSD 110, Econ 214, and Econ 215, every student with a concentration shall take two courses from Group I and two courses from Group II below:

Group I: Econ 408, 416, 429, 432, 450, 470; Math 456.

Group II: (GSB 311 or Econ 317), (GSB 312 or Econ 481), Econ 308, 411, 431.

Students with a secondary concentration are required to take GSB 211a, GSD 110, Econ 214, and Econ 215, and only four of the following indicated requirements: Econ 310, 315, 330, 440, or 441.

Economics

School of Business

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 108a, or		GSD 108b, or		GSD 110	3
114a	3	114b	3	GSD 103	3
GSD 101a	3	GSD 101b	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	0	USAF	0		

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 211a	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	Econ 214	3	Econ 215	3
Acct 251a	4	Acct 251b	4	Acct 251c	4
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	17		17		16

Third Year

GSA-3	3	GSA-3	3	Econ 330	4
GSB 311 or *	3	GSB 312 or *	3	Econ 440	4
GSC-3	3	GSC-3	3	Mgt 481	3
Econ 310	4	Econ 315	4	Mgt 320	5
Mktg 225	<u>3</u>	Mgt 340	<u>4</u>		
	16		17		16

Fourth Year

Econ 441		Econ*		Econ or elective*
Econ*		Econ or elective		Elective
Mgt 371	4	Mktg 325	4	Elective
Elective		Elective		Elective

*Every student with a concentration shall take two courses from Group I and two courses from Group II below:

Group I: Econ 408, 416, 429, 432, 450, 470; Math 456.

Group II: (GSB 311 or Econ 317), (GSB 312 or Econ 481), Econ 307, 411, 431.

Elementary Education

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC 100 ¹	3	GSC 101	3	GSC 103	
GSD 101a	3	GSD 101b	3	GSD 103	
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Elective ²	<u>3</u>	Elective	<u>3</u>	Elective	<u>3</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c, or 200	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 209, 202, or 203	3	GSC 204, 205, or 206	3	GSC 207, 208, 210, or 201	3
GSD 108a ³	3	GSD 108b	3	GSD 108c	3
GSE 201	3	USAF	1	Guid 205 ⁴	4
USAF	<u>1</u>			USAF	<u>0</u>
	16		16		16

Third Year

GSA-3	3	GSA-3	3	Math 210	4
GSB 300b ⁵	3	GSB 300c	3	PEW 319	4
GSC-3	3	GSC-3	3	Govt 300	4
ElEd 314	4	Eng 391 or exemption	3	EdAd 355 ⁶	4
Elective	3	ElEd 337	<u>4</u>		
	<u>16</u>		16		<u>16</u>

Fourth Year

ElEd 351b, or electives ⁷	<u>16</u>	ElEd 351b, or electives	<u>16</u>	ElEd 351b, or electives	<u>16</u>
	16		16		16

¹Both GSC 100 and 101 are required for a concentration in elementary education.

²ElEd 100 recommended elective during first year.

³One hour of foreign language may be elected instead of the math sequence, but six hours of math are required for certification.

⁴Special education concentration requires Psyc 301.

⁵Six hours of American History required for concentration in elementary education.

⁶Required of those who have not had GSB 331.

⁷A 12-hour area of interest should be selected over and above courses used to meet requirements.

Engineering Technology

School of Technology

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a ¹	3	GSD 114b ¹	3	FC 000	0
GSE PE	1	GSD 114c ¹	3	USAF	0
FC 000	0	FC 000	0	USAF	1
USAF	0	USAF	0	Math 150a	5
Tech 101a	<u>3</u>	Tech 101b	<u>3</u>	Tech 101c	<u>3</u>
	16		18		18

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c, or 200 3	
GSC-1	3	GSC-1	3	GSB-2	3
USAF	0	USAF	0	GSC-1	3
USAF	1	USAF	1	GSE PE	1
Engr 260a	3	Engr 260b	3	USAF	0
ET 304a	3	ET 304b	3	Engr 260c	3
Math 150b	<u>5</u>	Math 252a	<u>5</u>	ET 304c	<u>3</u>
	18		18		16

Third Year

GSA 358a, or		GSA 358b, or		GSB-3	3
Tech 300a	3	Tech 300b	3	GSC-2	3
GSB-2	3	GSB-2	3	GSE 201	3
GSC-2	3	GSC-2	3	Engr 311c	3
GSE PE	1	Engr 300b	3	ET 318b	3
Engr 300a	3	Engr 311b	3	Tech 300c	3
Engr 311a	<u>3</u>	ET 318a	<u>3</u>		
	16		18		18

Fourth Year

GSC-3	3	GSC-3	3	GSB-3	3
ET 361	4	Elective area ²	12	Elective area ²	12
Elective area ²	<u>8</u>				
	15		15		15

¹GSD 114a,b,c may be bypassed by advanced standing or proficiency examination.

²Specific courses are needed to fulfill the elective area requirements. Guidance and recommendations in the selection of the necessary courses for the various elective areas are made with a School of Technology adviser.

Total hours 201

Concentration 102 quarter hours

Effective as of the Summer Quarter, 1965

English

College of Education or
College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC 202	3	GSC-2	3	GSC 201 or 210	3
GSE 201	3	USAF	1	USAF	0
USAF	1	Electives ¹	6	Electives ¹	6-7
Electives ¹	<u>3</u>		<u>16</u>		<u>15-16</u>
	16		16		

Third Year

GSC-3	3	GSC-3	3	GSA-3	3
Eng 302a	4	Eng 302b	4	Eng 302c	4
Completion of series: 300, 390, 390a					
GSC-3; GSC 301, 313, 321, 335, 365, 340, 318, 345					
Electives: Eng 392, 492, 493; Phil 360, 400, 403, 438a, 431a					

Fourth Year

GSA-3	3	GSB-3	3	GSB-3	3
One course in drama: 460a,b,c,d, 464, 468, 471a,b					
One course in poetry: 404a,b, 421a,b,c,d, 420a,b, 473					
One course in fiction: 454a, 454b, 454c, 456, 458a, 458b, 412a, 412b, 412c, 441, 443, 447, 495a, 495b, 431b, 431c					
These three courses in literary forms should each be selected from a different historical period.					
Medieval	404a, 404b				
Renaissance	460a, 460b, 471a, 471b				
17-18th century	454a, 460c, 473				
19th century	420a, 421a, 421b, 421c, 454b, 458a				
20th century	420b, 421d, 454c, 456, 458b, 460d, 464, 468				

English 485 for students who plan student teaching in English. This course satisfies the methods requirements in the Education curriculum, replacing Education 315. Electives in types, periods, criticism, linguistics, semantics, as needed to total at least 48 hours in English beyond the freshman level.

¹Recommended as electives toward the concentration, beginning with third-level work with: English 300, 390; foreign language on the 200 level; courses in the secondary concentration, in education, mathematics, philosophy, science.

Executive Secretarial

School of Business

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD-1	3	GSD-1	3	GSD-1	3
GSD Math	3	GSD Math	3	GSD 110	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE-2	3	Econ 214	3	Econ 215	3
USAF	1	USAF	1	USAF	0
Acct 251a	<u>4</u>	Acct 251b	<u>4</u>	Acct 251c	<u>4</u>
	17		17		16

Third Year

GSA-3	3	GSA-3	3	GSB-3	3
Sec 241	1	Sec 341	4	Sec 304 ¹	3
Mgt 385	4	Mgt 340	4	Mgt 271	4
Mktg 225	3	Mktg 325	4	Mgt 371	4
Eng 300	<u>4</u>		<u>5</u>	Elective	<u>2</u>
	15		15		16

Fourth Year

GSB-3	3	GSC-3	3	GSC-3	3
Sec 324a ¹	4	Sec 324b	4	Sec 326	4
Sec 407	4	Mgt 361	3	Mgt 481	3
Elective	<u>4</u>	Mgt 320	<u>5</u>	Sec 427	<u>4</u>
	15		15		14

¹Students who have not had elementary courses in typewriting and/or shorthand must take one or more of the following courses before taking Sec 304 and 324a: Sec 201a,b,c, 211a,b,c.

Food and Nutrition (Dietetics)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	GSB-1 (waive)	0	GSB-1 (waive)	0
GSC 101	3	GSC 102	3	GSB 201a	3
GSD 101a	3	GSD 101b	3	GSC 103	3
GSD 108a	3	GSD 108b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSD 108c	3
FC 000	0	FC 000	0	FC 000	0
F&N 105	4	Chem 101b	1	GSE PE	1
		H&F 227	<u>3</u>	Chem 101c	<u>1</u>
	<u>17</u>		17		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSB 201c	3	GSB 201b	3	GSC 207, 208,	
C&T 251	3	Acct 250	4	201 or 210	3
GSC 209, 202,		F&N 206	4	H&F 237	3
or 203	<u>3</u>			Chem 350	<u>4</u>
	15		17		16

Third Year

GSE 201	3	GSC 204, 205,		GSB 303, 312,	
F&N 335	4	206	3	or 314	3
F&N 352a ¹	4	GSC 386	3	F&N 351 ¹	
Micr 301	5	F&N 320	4	F&N 355 ¹	4
		F&N 350 ¹	3	Psyc 320	4
		Guid 305	<u>4</u>	HEEd 307 ¹	<u>3</u>
	<u>16</u>		17		16

Fourth Year

GSA 301	4	GSA 302	2	GSC 387	3
GSB 311	3	H&F 332	4	F&N 359 ¹	4
F&N 340 ¹	4	H&F 341	4	F&N 356 ¹	4
F&N 325b ¹	4	Micr 422 ¹	5		
H&F 331	<u>3</u>				
	18		15		11

¹Offered alternate years.

RECOMMENDED ELECTIVES: C&T 131, 323, 327; F&N 321; Mgt 271, 371, 382, 385, 485; Psyc 323.

Food and Nutrition
(Institutional Management)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	GSB-1 (waive)	0	GSB-1 (waive)	0
GSC 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSB 201a	3
GSD 108a	3	GSD 108b	3	GSD 108c	3
GSE PE	1	GSE PE	1	GSD 103	3
FC 000	0	FC 000	0	FC 000	0
F&N 105	4	H&F 227	3	Chem 101c	1
		Chem 101b	<u>1</u>		
	<u>17</u>		<u>17</u>		<u>16</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSB 201c	3	GSB 201b	3	Chem 350	4
Acct 251a	4	Acct 251b	4	F&N 335	4
C&T 251	<u>3</u>	F&N 206	<u>4</u>	H&F 237	<u>3</u>
	<u>16</u>		<u>17</u>		<u>17</u>

Third Year

GSC 209, 202, or 203	3	GSC 204, 205, or 206	3	GSB 311	3
GSE 201	3	F&N 320	4	GSC 207, 208, or 210	3
F&N 352a ¹	4	Mgt 385	4	C&T 327	3
H&F 331	3	Psyc 320	4	F&N 351 ¹	3
Micr 301	5	F&N 350 ¹	3	F&N 355 ¹	3
				HEED 307 ¹	<u>3</u>
	<u>18</u>		<u>18</u>		<u>18</u>

Fourth Year

GSA 301	4	GSC 386	3	GSA 302	3
F&N 325b ¹	4	F&N 371 ¹	6	GSB 303, 312, or 314	3
H&F 332	4	H&F 341	4	GSC 387	3
Mgt 371	4	Micr 422*	5	F&N 356 ¹	4
				F&N 359 ¹	<u>4</u>
	<u>16</u>		<u>18</u>		<u>17</u>

ELECTIVES: C&T 323; Guid 305; H&F 424; Jrnl 331; Mgt 271, 371, 382; Psyc 323; R-T 161.

Recommend students do their field work during the summer preceding their Senior Year.

¹Offered alternate years.

Foreign Language

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3-4	GSD FL	3-4	GSD FL	3-4
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
	<u>16-17</u>		<u>16-17</u>		<u>17-18</u>

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	USAF	1	USAF	0
USAF	1	FL	3-5	FL	3-5
FL	3-5	Elective ¹	4	Elective ¹	4
	<u>16-18</u>		<u>17-19</u>		<u>16-18</u>

Third Year

GSA-3	3	GSA-3	3	FL	3-6
GSB 300a	3	GSB-3	3	Guid 305	4
GSC-3	3	GSC-3	3	Electives ¹	10
FL	4-6	FL	4-6		
Elective ¹	4	Elective ¹	4		
	<u>17-19</u>		<u>17-19</u>		<u>17-20</u>

Fourth Year

FL	3-8	FL	3-8	SEd 352	12-16
SEd 310	4	Eng 391 ²	3	Elective ¹	4
Electives ¹	9	SEd 315	3		
		Electives ¹	7		
	<u>16-21</u>		<u>16-21</u>		<u>16-20</u>

¹Electives may be used for secondary concentration or concentrations and additional Education courses to satisfy requirement. See Undergraduate Catalog.

²Or English 300 if English is secondary concentration, or waiver via proficiency test.

NOTE: A 36-hour concentration requires two secondary concentrations; a 48-hour concentration, one.

For specific concentration requirement, consult the Department of Foreign Languages.

Foreign Languages

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3-4	GSD FL	3-4	GSD FL	3-4
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16-17		16-17		17-18

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	Elective	3	Elective	3
USAF	1	USAF	1	USAF	0
FL	<u>3-5</u>	FL	<u>3-5</u>	FL	<u>3-5</u>
	16-18		16-18		15-17

Third Year

GSA-3	3	GSA-3	3	FL	3-5
GSB-3	3	GSB-3	3	Secondary	
GSC-3	3	GSC-3	3	concentration	4
FL	3-5	FL	3-5	Elective	9
Secondary		Secondary			
concentration	<u>4</u>	concentration	<u>4</u>		
	16-18		16-18		16-18

Fourth Year

FL	4-8	FL	4-8	FL	4-8
Secondary		Secondary		Secondary	
concentration	4	concentration	4	concentration	4
Elective	<u>8</u>	Elective	<u>8</u>	Elective	<u>8</u>
	16-20		16-20		16-20

Concentration is 42 hours, exclusive of 100 level FL courses.
Consult Department for specific requirements for concentrations.

A 48-hour concentration is available.

Forestry

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a ¹	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	Chem 101b	1	Chem 101c	1
GSD 101a	3	GSB 101b	3	GSB 101c	3
GSD 114a	3	GSC 101	3	GSC 102	3
GSE 101a ²	3	GSD 101b	3	GSD 103	3
For 104	3	GSD 114b	3	GSD 114c	3
FC 000	0	GSE PE	1	GSE PE	1
USAF	0	FC 000	0	FC 000	0
		USAF	0	USAF	1
				USAF	0
	<u>16</u>		<u>17</u>		<u>18</u>

Second Year

GSA 201a	3	GSA 200	3	GSA 201c	3
GSB 211a	3	GSA 201b	3	GSA 330	3
GSC 103	3	GSB 211b	3	GSB 211c	3
USAF	0	GSD 108c	3	GSC-2	6
USAF	1	USAF	0	GSE 201	3
ET 263a	4	USAF	1	USAF	0
For 221	<u>4</u>	PlI 301	<u>4</u>		
	18		17		18

Option A (Forest Resource Management)

Third Year

GSA 340	3	GSB-3	3	For 306	3
GSC-2	3	For 365a	4	For 331	2
For 320	4	For 363a	5	For 340	2
For 330	2	Bot 320	5	For 350	3
GSB-3	3			For 363b	3
GSC-3	3			For 365b	3
	<u>18</u>		<u>17</u>	For 465	<u>2</u>
					18

Fourth Year

Bot (elective)	3	For 332	3	For (elective)	4
Zool 463	4	For 375	4	Bot 457	4
For 369	3	GSC-3	3	Zool (elective)	4
For 466	3	For 470b	4		
For 470a	<u>4</u>	For (elective)	<u>3</u>		
	17		17		12

Option B (Forest Recreation and Park Management)

Third Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSC-2	3	Zool (electives)	4	For 331	2
GSB-3	3	For 365a	4	For 306	3
GSC-3	3	For 363a	5	For 340	2
GSA 340	3	GSB-3	3	For 350	3
PlI 264	4	AgI 214	2	For 363b	3
				For 365b	3
				For 465	<u>2</u>
	<u>16</u>		<u>18</u>		18

Fourth Year

Zool 463	4	GSC-3	3	PlI 304	3
Mgt 385	4	Rec 365	4	Rec 450	4
For 450	4	For 375	4	For (electives)	5
For 470a	<u>4</u>	For 471	<u>4</u>	Bot (electives)	<u>3</u>
	16		15		16

¹If Math 106 is required, delay GSA 101a until following quarter.

²Non-swimmers should take beginning and intermediate swimming;
fair swimmers should take intermediate swimming.

³Students with a concentration in Forestry should take Art
Appreciation.

There are options in the forestry program.

No student should elect an option without consultation with the
department. Such a conference should be arranged as soon as
possible.

Geography

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL ¹	3	GSD FL	3	GSD FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 200 ²	3	GSA 201a	3	GSA 201b	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	GSD 108a, or		GSD 108b, or	
USAF	1	114a	3	114b	3
Geog 302	4	USAF	1	USAF	0
	<u>17</u>	Geog 304	<u>4</u>	Geog 306	<u>4</u>
			17		16

Third Year

GSA-3	3	GSA-3	3	Geog 4-a	4
GSB-3	3	GSB-3	3	Secondary	
GSC-3	3	GSC-3	3	concentration	4
Geog 308	3	Geog 310b	3	Secondary	
Geog 310a	3	Secondary		concentration	4
	<u>15</u>	concentration	<u>4</u>	Elective	<u>4</u>
			16		16

Fourth Year

Geog 4-b	3	Geog 4-2	3	Geog 4-b	3
Geog 490a	1	Geog 490b	1	Geog 490c	1
Secondary		Secondary		Secondary	
concentration	4	concentration	4	concentration	4
Geog 4-a	4	Elective	4	Elective	4
Elective	<u>4</u>	Elective	<u>4</u>	Elective	<u>4</u>
	16		16		16

¹Preferably French, German or Russian.²GSA 200 is required for the concentration.³Student should work out concentration program with departmental adviser, who will also suggest third-level General Studies courses.

Geology

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSD FL	3-4	GSD FL	3-4	GSD FL	3-4
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
	<u>16-17</u>		<u>16-17</u>		<u>16-17</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-2	3	GSB-2	3	GSB-2	3
USAF	1	USAF	1	GSC-2	3
Chem 111a	5	Chem 111b	5	USAF	0
Geol 220	5	Geol 221	5	Chem 111c	5
	<u>17</u>		<u>17</u>	Geol 302	4
					<u>18</u>

Third Year

GSB-3	3	GSA-3	3	GSA-3	3
GSC-2	3	GSB-3	3	GSC-3	3
Geol 310	4	GSC-2	3	Geol elective	4
Geol 431	4	Geol elective	4	Elective	6-7
Elective	3-4	Elective	3-4		
	<u>17-18</u>		<u>16-17</u>		<u>16-17</u>

Fourth Year

GSC-3	3	Geol 405	4	Geol elective	4
GSE 201	3	Phys 206c or		Phys 206b or	
Geol 425	5	211c	5	211b	5
Phys 206a or		Elective	9	Elective	9
211a	5				
	<u>16</u>		<u>18</u>		<u>18</u>

The undergraduate concentration in geology gives basic preparation for graduate training in all the areas of professional specialization such as: areal geology, structure, stratigraphy, sedimentation, paleontology, mineralogy and crystallography, geomorphology, and allied areas of geophysics, geochemistry, oceanography, and engineering geology. Each area of specialization requires appropriate supporting courses.

Appropriate undergraduate concentration programs may be arranged directed toward the areas of: Earth Science Teaching, Geology in (Engineering) Applied Science, Conservation, Recreation and Outdoor Education, and Business.

A secondary concentration should be initiated in the junior year; recommended fields are chemistry, physics, zoology or botany, and mathematics.

Chem 111a,b,c, is substitution for waiver of GSA-1.

Math 106-0 will be required for students unprepared for Math 114.

The foreign language must be German, Russian, or French.

We urge as much Mathematics and chemistry as a student can take.

Government

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201c	3	GSA 201b	3
GSB 201a, ¹ 211a ²		GSB 201c ¹ 211b,		GSB 201b ¹ or	
or 211b	3	or 211a ²	3	211c ²	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	USAF	1	USAF	0
Govt 231 ¹	5	Govt 232 ¹	5	Govt	5
Elective	<u>3</u>	Elective	<u>3</u>	Elective	<u>3</u>
	18		18		17

Third Year

GSA-3	3	GSA-3	3	Elective	5
GSB-3	3	GSB-3	3	Govt	7
GSC-3	3	GSC-3	3	Secondary	
GSE 201	3	Govt	4	concentration	5
Govt	5	Secondary			
	<u>17</u>	concentration	<u>4</u>		<u>17</u>
			17		

Fourth Year

Govt	8	Govt	4	Govt	4
Secondary		Secondary		Secondary	
concentration	6	concentration	6	concentration	3
Elective	<u>3</u>	Elective	<u>7</u>	Elective	<u>10</u>
	17		17		17

¹One who takes GSB 201a,b,c, should also take Govt 231, 232.

²One who takes GSB 211a,b,c, should also take Govt 232.

Health Education (Elementary)

College of Education

Students concentrating in the Special Certificate Program in health education should follow the Elementary Education program in the College of Education. In addition, they must complete the 48-hour concentration in health education as follows:

GSE 201-3
HEd 205-4
300-3
311 or 312-4
313s-4
334s-4
350-4
355-4
400-4
490-6

plus 8 hours in health education.

Health Education (Secondary)
(With 30-hours secondary concentration)

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE-1	1	GSE-1	1	GSE-1	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Elective	<u>3</u>	Elective	<u>3</u>	GSE 201	<u>3</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD Math	3	GSD Math	3	GSD Math	3
Hed 205 ¹	4	Hed 311 or 312	4	Hed 300 or 334s	4
USAF	1	USAF	1	USAF	0
	<u>17</u>		<u>17</u>	Secondary concentration <u>2-3</u>	<u>17-18</u>

Third Year

GSA-3	3	GSA-3	3	Secondary	
GSB-3	3	GSB-3	3	concentration 3-4	
Guid 305	4	GSC-3	3	GSC-3	3
Hed 300 or 334s	3-4	SEd 310	4	Guid 422	3
Hed 313s	<u>4</u>	Hed 355	4	Hed 460	4
	17-18		<u>17</u>	Hed 471	<u>4</u>
					17-18

Fourth Year

Secondary concentration 4-8		Secondary concentration 8-10		Student Teaching	12
Hed elective	4	IM 417	4	SEd 440	4
Hed 490	<u>4-8</u>	Hed 400	<u>4</u>		<u>16</u>
	16-18		18		

¹Those with concentration in Health Education (secondary) must complete 205 by the end of the second year or substitute a Health Education elective.

Health Science

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a (waive)	0	GSA 101b (waive)	0	GSA 101c (waive)	0
GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a	3	GSD 108b	3	GSD 108c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSB 211a	3	GSB 201c	3	GSB 201b	3
GSC-2	3	GSB 211b	3	GSB 211c	3
GSD FL	3	GSC-2	3	GSC-2	3
GSE 201	3	GSD FL	3	GSD FL	3
USAF	1	USAF	1	USAF	0
Zool 102	<u>5</u>	Zool 103	<u>5</u>	Phs1 209	<u>5</u>
	18		18		17

Third Year

GSA 101b	3	GSA 101c	3	Elective	3
GSB-3	3	GSA-3	3	GSC-3	3
GSC-3	3	GSB-3	3	Psyc 305	4
GSC-3	3	Chem 101c	1	Chem 350	4
Chem 101b	1	Govt 232	5	HEd 300	3
HEd 325	<u>3</u>				
	16		15		17

Fourth Year

Psyc 307	4	Psyc 432	4	Electives	11-12
Govt 360	5	Govt 440	3	HEd 356	5
Soc 335	4	Soc 336	4		
HEd 355	<u>4</u>	Micr 301 or 101	<u>4</u>		
	17		16		16-17

Phs1 315 may be substituted for advanced students. Requirements for health science concentration: HEd 300, 325, 355, 356; Micr 201 or 301; Chem 112, 112, or 110, 240, 350; Math 111, 112, 220; Phs1 209 or 315; Zool 102, 103, or 316; Psyc 304, 307, 412; Soc 311, 316; Govt 232, 360, 466.

Elective and required courses must include 64 hours of senior college credit. Recommended electives: Ag 303, 231; Geog 310; Geol 220; HEd 101; Micr 442, 423; Govt 466; Phs1 317, 433; Phys 206, 207, 208; Zool 310, 316, 320, 321, 401, and 407.

If any General Studies courses are passed by proficiency exams, it is suggested the student take the Chemistry sequence at the earliest time possible.

History

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSB 300a ¹	3	GSB 300b	3	GSB 300c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	USAF	1	USAF	0
USAF	<u>1</u>	Hist elective	<u>3</u>	Hist elective	<u>3</u>
	16		16		15

Third and Fourth Years

GSA-3	3	GSA-3	3	GSB-3	3
GSB-3	3	GSC-3	3	GSC-3	3

There is considerable variation in the requirements for a history concentration, depending upon the interest of the student. Prospective students should consult with the appropriate adviser in the Liberal Arts and Sciences division of the Academic Advisement Center.

¹Students planning a concentration or secondary concentration in history are strongly advised to take GSB 300a,b,c in their sophomore year. The elements of this sequence must be taken in order. The 48 quarter hours required for a concentration include the General Studies courses which are taught by members of the department.

Home Economics (Apparel Design)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101	3	GSA 101b	3	GSA 101c	3
GSC 101	3	Chem 101b	1	Chem 101c	1
GSD 101a	3	GSC 102	3	GSC 103	3
GSE PE	1	GSD 101b	3	GSD 103	3
FC 000	0	GSE PE	1	GSE PE	1
C&T 131	3	FC 000	0	FC 000	0
Elective	3	C&T 127	4	C&T 231 ¹	3
		C&T 135	<u>3</u>	H&F 227	<u>3</u>
	<u>16</u>		18		17

Second Year

GSB 101b	3	GSB 101c	3	GSB 101a	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 209, 202, or 203	3	GSC 204, 205, or 206	3	GSC 207, 208, 201, or 210	3
F&N	4	GSE 201	3	Art 341	4
H&F 237	<u>3</u>	C&T 323	<u>2</u>	C&T 233	<u>3</u>
	16		14		16

Third Year

GSA 201a	3	GSA 201b	3	GSC 3--	3
GSB 3--	3	GSC 3--	3	GSD 108c or FL	3
GSD 108a or FL	3	GSD 108b or FL	3	C&T 327	3
C&T 300	2-4	C&T 322 ¹	3	C&T 364 ¹	3
C&T 360	4	C&T 334 ¹	3	HEEd 306 ¹	2
				H&F 341	<u>4</u>
	<u>15-17</u>		15		18

Fourth Year

GSA 201c	3	GSA 3--	3	GSA 3--	3
GSB 3--	3	Art Hist,		C&T 371 ²	6
C&T 339 ¹	3	choice	3-4	C&T 433 ¹	4
H&F 331	3	C&T 329 ¹	3		
Electives	5	C&T 331 ¹	3		
		C&T 434 ¹	<u>4</u>		
	<u>17</u>		16-17		<u>13</u>

¹Offered alternate years.

²Field experience to be arranged between Junior and Senior yrs.
Between Sophomore and Junior yrs., if qualified.

SUGGESTED ELECTIVES: Art 100, 245, 385; Art History courses -
choice; C&T 251; H&F 324, 332; Jrnl 260a, 393.

Home Economics
(Clothing and Textiles Merchandising)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 101	3	Chem 101b	1	Chem 101c	1
GSD 101a	3	GSC 102	3	GSC 103	3
GSE PE	1	GSD 101b	3	GSD 103	3
FC 000	0	GSE PE	1	GSE PE	1
C&T 131	3	FC 000	0	FC 000	0
C&T 135	3	C&T 127	4	C&T 231 or 331 ¹	3
				H&F 227	3
	<u>16</u>		<u>15</u>		<u>17</u>

Second Year

GSB 101b	3	GSB 101c	3	GSB 101a	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 209, 202, or 203	3	GSC 204, 205, or 206	3	GSC 207, 208, 201, or 210	3
GSE 201	3	Acct 250	4	GSD 108a or FL	3
H&F 237	3	C&T 233	3	Mktg 225	3
H&F 331	<u>3</u>				
	<u>18</u>		<u>16</u>		<u>15</u>

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSD 108b or FL	3	GSB-3	3	GSB-3	3
C&T 323	2	GSD 108c or FL	3	GSC-3	3
F&N 312	4	C&T 334, or 434 ¹	4	HEEd 306 ¹	2
Mktg 325	4	Mktg 333, or Jrnl 370	<u>3-4</u>	Mktg 332	4
	<u>16</u>		<u>16-17</u>		<u>15</u>

Fourth Year

GSA-3	3	GSA-3	3	C&T 364 ¹	3
GSC-3	3	C&T 322 ¹	3	C&T 371 ²	6
C&T 339 ¹	3	C&T 329 ¹	3	C&T 300	2-4
C&T 360	4	C&T 327	3	Electives	2
Mktg 337	<u>4</u>	H&F 341	<u>4</u>		
	<u>17</u>		<u>16</u>		<u>13-15</u>

¹Offered alternate years.

²Field experience to be arranged between Junior and Senior yrs.
Between Sophomore and Junior yrs., if qualified.

SUGGESTED ELECTIVES: Art 385; C&T 251, 474; HEEd 111; H&F 324, 332; Jrnl 260a.

Home Economics (Foods in Business)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSB 201a	3
GSC 101	3	Chem 101b	1	GSA 101c	3
GSD 101a	3	GSC 102	3	Chem 101c	1
GSD 108a	3	GSD 101b	3	GSC 103	3
FC 000	0	GSD 108b	3	GSD 108c	3
F&N 105	4	GSE PE	1	GSD 103	3
HEEd 111	2	FC 000	0	GSE PE	1
		H&F 227	3	FC 000	0
	<u>18</u>		<u>17</u>		<u>17</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201c	3	GSB 201b	3	GSB 211c	3
GSB 211a	3	GSB 211b	3	GSC 207, 208,	
GSC 209, 202,		GSC 204, 205,		201, or 210	3
or 203	3	or 206	3	Chem 350	4
C&T 251	3	F&N 206	4	R-T 161	4
H&F 237	3				
	<u>18</u>		<u>16</u>		<u>17</u>

Third Year

GSA 301	4	GSA 302	3	GSE PE	1
F&N 320	4	Acct 250	4	GSE 201 ¹	3
H&F 331	3	F&N 321	3	F&N 356 ¹	4
Micr	5	H&F 341	4	H&F 324	2
		Mktg 225	3	Jrnl 393	3
				Mktg 325	4
	<u>16</u>		<u>17</u>		<u>17</u>

Fourth Year

GSB 311	3	GSB 303, 312,		GSC 348 or 387	3
F&N 335	4	or 314	3	C&T 327	3
F&N 352a ¹	4	GSC 342 or 386	3	H&F 424 ¹	4
Mktg 333	4	Mktg 337	4	H&F 332	4
		C&T 323	2		
	<u>15</u>		<u>12</u>		<u>14</u>

ELECTIVE: Guid 305; Jrnl 331; Mgt 271, 384, 385; Psych 323, 410; R-T 256.

¹Offered alternate years.

Home Economics (Home Advisers)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB-1 (waive)	0	GSB-1 (waive)	0	GSB-1 (waive)	0
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
F&N 105	4	C&T 127	4	C&T 131	3
HEEd 111	<u>2</u>	H&F 227	<u>3</u>	H&F 237	<u>3</u>
	16		17		16

Second Year

GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC 209, 202, or 203	3	GSC 204, 205, or 206	3	GSC 207, 201, 210, or 208	3
GSD 108a or FL	3	GSD 108b or FL	3	GSD 108c or FL	3
GSE 201	<u>3</u>	F&N 206	<u>4</u>	C&T 233	<u>3</u>
	15		16		15

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 301	3	GSB 302	3	Eng 391	3
C&T 323	2	C&T 135	3	C&T 327	3
H&F 331	3	H&F 341 ¹	4	F&N 335	4
R-T 161	<u>4</u>	HEEd 370 ¹	<u>5</u>	F&N 320	<u>4</u>
	15		18		17

Fourth Year

GSA-3	3	GSA-3	3	H&F 324	2
GSC-3	3	GSC-3	3	HEEd 371	6
H&F 332	4	H&F 345	3	Electives	6
C&T 360	4	F&N 321	3		
Jrn1 393	<u>3</u>	HED 310	<u>4</u>		
	17		16		14

¹Offered alternate years.

Home Economics (Home and Family)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (101)a	3	GSA-1 (101)b	3	GSA-1 (101)c	3
GSB-1 (101)b	3	Chem (101)b	1	Chem (101)c	1
GSC-1 (100 or 101)	3	GSB-1 (101)c	3	GSB-1 (101)a	3
GSD-1 (101)a	3	GSC-1 (102)	3	GSC-1 (103)	3
GSE PE	1	GSD-1 (101)b	3	GSD-1 (103)	3
FC 000	0	GSE PE	1	GSE PE	1
F&N 105	<u>4</u>	FC 000	0	FC 000	0
	17	C&T 127	<u>4</u>	C&T 135	<u>3</u>
			18		17

Second Year

GSA-2 (201)a	3	GSA-2 (201)b	3	GSA-2 (201)c	3
GSB-2 (201)a	3	GSB-2 (201)c	3	GSB-2 (201)b	3
GSC-2 (209, 202, or 203)	3	GSC-2 (204, 205, or 206)	3	GSC-2 (207, 208, 201, or 210)	3
GSD (108)a	3	GSD (108)b	3	GSD (108)c	3
C&T 131	<u>3</u>	F&N 206	<u>4</u>	H&F 237	<u>3</u>
	15		16		15

Third Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB-3	3	GSB-3	3	GSE 201	3
H&F 227	3	GSC-3	3	C&T 233	3
H&F 331	3	F&N 320	4	F&N 335	4
H&F 345	<u>3-4</u>	Electives	<u>4</u>	Electives	<u>4</u>
	15-16		17		17

Fourth Year

H&F 332	4	F&N 321	3	C&T 327	3
C&T 323	2	H&F 324	2	H&F 341	4
Electives	9	Electives	7	Electives	8
	<u>15</u>	H&F 366	<u>3</u>		<u>15</u>
			15		

Recommended electives for a General course of study: C&T 145, 331, 360; HED 310; HEED 111.

For students with a particular interest in the Child Development - Family Relations area, the following electives are suggested: F&N 359; Guid 412; H&F 456, 466; Psyc 301, 303, 305.

For students with a particular interest in the Consumer Services area, the following electives are suggested: C&T 322, 339; F&N 356; HEED 370; H&F 424, 435; Jrnl 331, 369, 370, 391, 393, 397; R-T 161, 257.

Home Economics
(Home Economics Education)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB-1 (waive)	0	GSB-1 (waive)	0	GSB-1 (waive)	0
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
F&N 105	4	C&T 127	4	H&F 237	3
HEEd 111	<u>2</u>	C&T 135	<u>3</u>	C&T 131	<u>3</u>
	16		17		16

Second Year

GSA 101a ¹	3	GSA 101b ¹	3	GSA 101c ¹	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC 209, 202, or 203	3	GSC 204, 205, or 206	3	GSC 207, 208, or 210, 201	3
GSE 201	3	GSD 108b or FL	3	GSD 108c or FL	3
GSD 108a or FL	3	F&N 206	4	C&T 233	3
H&F 227	<u>3</u>				
	18		16		15

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-3 (choice)	3	GSB 331	3	F&N 321	3
H&F 331	3	HEEd 309	5	Eng 391 ²	3
C&T 360	4	H&F 341	4	C&T 327	3
Guid 305	4	C&T 323	2	F&N 335	4
				H&F 324	<u>2</u>
	17		17		18

Fourth Year

GSA (choice)	3	GSA (choice)	3	SEd 352b	12
H&F 332	4	HEd 310	4	HEEd 310	4
GSC-3 (choice)	3	GSC-3	3		
H&F 345	3	F&N 320	4		
Elective ³	<u>4</u>	SEd 310	<u>4</u>		
	17		18		16

¹Well-prepared students may wish to complete this sequence freshman year.

²May proficiency by "B" average at GSD first level or examination.

³Elect one: SEd 407, 440; Guid 422; EdAd 355; IM 417.

Optional: A one-hour lab course for one credit offered for GSA 101b,c. Students desiring to register for the lab should indicate Chem 101b-1 and 101c-1.

Home Economics (Interior Design)

School of Home Economics

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 101	3	Chem 101b	1	Chem 101c	1
GSD 101a	3	GSC 102	3	GSC 103	3
GSD 108a ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 108b ¹	3	GSD 108c ¹	3
FC 000	0	GSE PE	1	GSE PE	1
C&T 251	3	FC 000	0	FC 000	0
		C&T 131	<u>3</u>	C&T 135	<u>3</u>
	<u>16</u>		17		17

Second Year

GSB 101b	3	GSB 101c	3	GSB 101a	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 209, 202,		GSC 204, 205,		C&T 231 ²	3
or 203	3	or 206	3	C&T 381	4
C&T 390	5	C&T 380	4	H&F 237	3
IT 304a	<u>3</u>	H&F 227	<u>3</u>		
	17		16		<u>16</u>

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c or 200	3
C&T 382	4	GSB-3--	3	GSE 201	3
F&N 312	4	C&T 391a	5	Art hist	
Des 100a		Des 100b		(choice)	3-4
(Sec 3) ²	5	(Sec 3) ²	5	C&T 391b	5
	<u>16</u>		<u>16</u>	HEEd 306 ²	<u>2</u>
					16-17

Fourth Year

GSA-3--	3	GSA-3--	3	GSC 341 or 342	3
GSB-3--	3	GSC 340	3	C&T 395	4
GSC 207, 208,		C&T 331 ²	3	C&T 300	2-4
201, or 210	3	C&T 394	4	Electives	3-4
C&T 391c	5	H&F 341	4		
H&F 331	<u>3</u>				
	17		<u>17</u>		<u>12-15</u>

¹Students may take GSD FL-9 instead of GSD 108-9, if proficiency out of GSD 108.

²Offered alternate years.

SUGGESTED ELECTIVES: Acct 250; Art 385, Art history -- choice 471, 473, or other; C&T 322, 371, 431, 432; HEEd 111; H&F 324, 332; Mgt 271, 371; IT 316a; Jrnl 370, 260a, 331, 393.

Industrial Education¹

School of Technology

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSD 101a	3	GSB 101b	3	GSB 101c	3
GSD 114a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 114b	3	GSD 114c	3
USAF	0	GSE PE	1	GSE PE	1
FC 000	0	USAF	0	USAF	0
IEd 100	2	FC 000	0	USAF	1
Tech 101a	3	Tech 101c	3	FC 000	0
				IT 327a	3
	<u>15</u>		<u>16</u>		<u>17</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c or 200	3
GSB 101a	3	GSB 201a	3	GSB 201c	3
GSC-1	3	GSC-1	3	GSC-1	3
USAF	0	USAF	0	GSE 201	3
USAF	1	USAF	1	USAF	0
IT 312a	3	IT 343a	3	Elective area ²	6
IT 322a	<u>3</u>	IT 320a	<u>4</u>		
	16		17		<u>18</u>

Third Year

GSA 358a or		GSA 358b or		GSB 331	3
Tech 300a	3	Tech 300b	3	GSC-2	3
GSB 201b	3	GSC-2	3	IEd 380	3
GSC-2	3	IEd 380 ³	3	Elective area	5
Elective area	3	Elective area	3	Tech 300c	3
Guid 305	<u>4</u>	SED 310	<u>4</u>		
	16		16		<u>17</u>

Fourth Year

GSB-3	3	GSC-3	3	SEd 352 or	
GSC-3	3	IEd 408	3	IEd 435	12-16
Prof. Ed. elec	4	IEd 380	3	Elective area	3
IEd 491a	3	Elective area	7		
Elective area	<u>3</u>				
	16		<u>16</u>		<u>15-19</u>

¹Course of study requirements for industrial arts teaching and manual arts therapy. Students specializing in trades and industries teaching or technical teaching will need to make substitutions as required for the specific area of teaching being pursued after consultation with a School of Technology adviser.

²Special courses are needed to meet the elected teaching area requirements.

³Students may take a maximum of 12 quarter hours of IEd 380.

Total hours 195

Concentration hours 70

Effective as of the Summer Quarter, 1965

Industrial Technology

School of Technology

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	GSB-1 (waive)	0	GSB-1 (waive)	0
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
USAF	0	USAF	0	USAF	0
FC 000	0	FC 000	0	USAF	1
Tech 101a	3	Tech 101b	3	FC 000	0
				Tech 101c	3
	<u>16</u>		<u>16</u>		<u>17</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c or 200	3
GSB 201a ¹	3	GSB 201c ¹	3	GSB 201b ¹	3
GSB 211a ¹	3	GSB 211b ¹	3	GSC 208	3
USAF	0	GSC 205	3	GSE 201	3
USAF	1	USAF	0	USAF	0
IT 312a	3	USAF	1	Econ 215	3
IT 322a	3	IT 343a	3	IT 327a	3
	<u>16</u>		<u>16</u>		<u>18</u>

Third Year

GSA 358a or Tech 300a	3	GSA 358b or Tech 300b	3	GSB 311	3
IT 300a	4	ET 361	4	GSC-2	3
IT 306a	3	IT 345a	3	ApS 307	5
IT 337a	3	IT 337b	3	Mgt 382	3
Mgt 380	4	Psyc 320	4	Tech 300c	3
	<u>17</u>		<u>17</u>		<u>17</u>

Fourth Year

GSB 300c	3	GSC 348	3	GSC 387	3
IT 305a	3	IT 318a	3	Elective area	13
IT 314a	3	Elective area	12		
IEd 465a	4				
Elective area ²	4				
	<u>17</u>		<u>18</u>		<u>16</u>

¹The five courses in GSB-2 are departmental requirements.

²Specific courses are needed to meet the elective area requirements. Such courses are selected with the guidance of the School of Technology adviser.

Total: 201 quarter hours

Effective as of the Summer Quarter, 1965

Inter-American Studies

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC 101a	3	GSC 101b	3	GSC 101c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 140a ¹	3	GSD 140b ¹	3	GSD 140c ¹	3
GSE PE	1	FC 000	0	FC 000	0
FC 000	0	USAF	0	USAF	1
USAF	<u>0</u>		<u>15</u>		<u>16</u>
	16				

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC 202 or 209	3	GSC 204, 205,		GSC 208	3
GSE 201	3	or 206	3	GSE PE	1
USAF	1	GSE PE	1	USAF	0
Span 201	3	USAF	1	Span 203	3
		Span 202	3	Elective	3
		Elective	<u>3</u>		<u>16</u>
	<u>16</u>		17		

Third and Fourth Years

GSA-3	3	GSA-3	3	GSB-3	3
GSB-3	3	GSC-3	3	GSC-3	3
GSD 135a	3	GSD 135b	3	GSD 135c	3

A student desiring to concentrate in Inter-American studies should consult with Professor Albert W. Bork, director of the Latin American Institute, as early as possible.

¹Only the student who has not taken Spanish in high school will take GSD 140a,b,c as a freshman. Otherwise, he will take GSD 135a, b,c (Portuguese) in its place as a junior or senior, and will begin with Spanish 201, 202, 203, and 220 as a freshman.

Journalism

School of Communications

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC 110a	3	GSC 110b	3	GSC 110c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Jrnl 101 ⁴	<u>3</u>	Jrnl 102 ⁴	<u>3</u>	Jrnl 103	<u>3</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
USAF	1	USAF	1	USAF	0
Jrnl 201	<u>3</u>	Jrnl 202	<u>3</u>	Specialization ¹	<u>5</u>
	16		16		17

Third and Fourth Years

Complete one of the specializations which follow.

¹One specializing in advertising should take Econ 214, 215 or Mktg 225, 325 during his fifth and sixth quarters; one specializing in Community Newspaper should take Jrnl 350 plus 2 hours; in Magazine Journalism Jrnl 297 plus 2 hours; in News and Editorial Jrnl 303 plus 2 hours. Govt 330 is an example of a 2-hour elective course suggested for the journalism student at the sophomore-junior level.

The journalism student is urged to take GSB 201a,b,c as junior-year electives in order to be prepared for upper-division courses in sociology, psychology, and anthropology.

Journalism (Advertising)

School of Communications

Third Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB-3	3	GSB-3	3	Jrnl 371	3
GSE 201	3	GSC-3	3	Electives ²	10
Jrnl 370	3	Jrnl 372	5		
Electives ²	<u>4</u>	Electives ²	<u>2</u>		
	16		16		16

Fourth Year

Jrnl 373	2	Jrnl 374	3	Jrnl 376	4
Electives ²	12	Electives ²	13	Jrnl 399 ³	1
	<u>14</u>		<u>16</u>	Electives ²	<u>11</u>
					16

²The student must complete 48 hours of journalism courses. Recommended journalism electives for advertising specialization are 214, 260a, 432, 433.

For the advertising specialization, suggested electives outside journalism include: Econ 214, 215, 317, 355, Mktg 225, 325, 331, 332, 438, Psyc (GSB 201b), 305, 320, 321, 322, Soc 305, 306, 320, 321, 333, 335, 338, 340, anthropology, English.

³Jrnl 399, Senior Seminar, to be taken in the student's last quarter as an SIU undergraduate.

⁴Jrnl 101 is offered in the fall and spring, and Jrnl 102 is available in winter and summer every year; for the student entering SIU during any other quarter besides fall. 102 may be taken before 101; both must be taken before 103.

Journalism (Community Newspaper)

School of Communications

Third Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-3	3	GSA-3	3	GSC-3	3
GSB-3	3	GSB-3	3	Jrnl 442	3
GSE 201	3	GSC-3	3	Electives ²	10
Jrnl 265b(a)	3	Jrnl 265b(b)	3		
Electives ²	<u>4</u>	Electives ²	<u>4</u>		
	16		16		16

Fourth Year

Jrnl 351	3	Jrnl 352	3	Jrnl 399 ³	1
Electives ²	<u>11</u>	Electives ²	<u>13</u>	Electives ²	<u>15</u>
	14		16		16

²The student must complete 48 hours of journalism courses. Recommended journalism electives for the community newspaper specialization are 214, 260a (a), 330, 370, 371.

³Jrnl 399, Senior Seminar, to be taken in the student's last quarter as an SIU undergraduate.

Journalism (Magazine)

School of Communications

Third Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB-3	3	GSB-3	3	Jrnl 442	3
GSE 201	3	GSC-3	3	Jrnl 397	3
Jrnl 369	3	Jrnl 303	3	Electives ²	7
Electives ²	<u>4</u>	Electives ²	<u>4</u>		
	16		16		16

Fourth Year

Electives ²	14	Jrnl 398	3	Jrnl 399 ³	1
	<u>14</u>	Electives ²	<u>13</u>	Electives ²	<u>15</u>
			16		16

Journalism (News and Editorial)

School of Communications

Third Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB-3	3	GSB-3	3	Jrnl 442	3
GSE 201	3	GSC-3	3	Electives ²	10
Jrnl 330	3	Electives ²	7		
Electives ²	<u>4</u>				
	16		<u>16</u>		<u>16</u>

Fourth Year

Jrnl 390	3	Jrnl 391	3	Jrnl 399 ³	1
Electives ²	<u>11</u>	Electives ²	<u>13</u>	Electives ²	<u>15</u>
	14		16		16

²The student must complete 48 hours of journalism courses. Recommended journalism electives for the magazine journalism and news and editorial specializations are 214, 260a(a), 370, 432.

For the community newspaper, magazine journalism, and news and editorial specializations suggested electives outside journalism include: Eng 301, 309a, 309b, 335, 356, 447, 458, Govt 232, 243, 305, 330, 340, 360, 363, 370, 371, 380, 385, 390, 406, 410, 415, 420, Hist 308, 312, 330, 353a, 352b, 352c, 365, 367a, 367b, 367c, 372b, 401, 405, 411a, 411b, 411c, 415a, 415b, 418, 435a, 435b, 435c, 440, Soc 305, 306, 320, 335, 336, 340, 371, 372, 373, GSB 321, anthropology, economics, foreign language.

³Senior Seminar, Jrnl 399, to be taken in the student's last quarter as an SIU undergraduate.

Journalism

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC 110a	3	GSC 110b	3	GSC 110c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Jrnl 101	<u>3</u>	Jrnl 102	<u>3</u>	Jrnl 103	<u>3</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
USAF	1	USAF	1	USAF	0
Jrnl 201	3	Jrnl 202	3	Jrnl 303	3
	<u>16</u>		<u>16</u>	Elective ¹	<u>1</u>
					16

Third Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB-3	3	GSB-3	3	Electives ¹	13
GSE 201	3	GSC-3	3		
Electives ¹	7	Jrnl 421	4		
	<u>16</u>	Elective ¹	<u>3</u>		<u>16</u>
			16		

Fourth Year

Electives ¹	16	Jrnl 422	3	Professional	
		Electives ¹	13	Quarter	16

¹Electives should include requirements in the College of Education for the teaching certificate, as well as enough electives in the Department of Journalism curriculum so that the student has 48 hours credit in journalism. These recommended electives include 260a(a), 370, 390, 391. The student should verify the education requirements with a College of Education representative. Besides the journalism concentration, a secondary concentration of at least 30 hours must be completed from such recommended fields as English, history, speech, theater, Secretarial and Business Education.

Management (Financial)

School of Business

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	GSB-1 (waive)	0	GSB-1 (waive)	0
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a	3	GSD 108b	3	GSD 110	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSE 201	3
GSC-2	3	GSC-2	3	GSC-2	3
A/C 251a	4	A/C 251b	4	A/C 251c	4
Mktg 225	3	Econ 214	3	Econ 215	3
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	17		17		16

Third Year

Mgt 340	4	Mktg 325	4	Mgt 320	5
Mgt 371	4	Mgt 361	3	Mgt 327	4
GSA-3	3	GSA-3	3	Mgt 473	4
Mgt 380	<u>4</u>	Elective	<u>7</u>	GSB 311	<u>3</u>
	15		17		16

Fourth Year

GSC-3	3	GSB-3	3	GSC-3	3
Mgt 475	4	Mgt 421	4	Mgt 481	3
Electives	9	Electives	9	Mgt 479	4
	<u>16</u>		<u>16</u>	Mgt 323	4
				Electives	<u>2</u>
					16

Management (General)

School of Business

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	GSB 201c	3	GSB 201b	3
GSB 201a	3	GSC 102	3	GSC 103	3
GSC 100 or 101	3	GSD 101b	3	GSD 103	3
GSD 101a	3	GSD 108b	3	GSD 110	3
GSD 108a	3	GSE PE	1	GSE PE	1
GSE PE	1	FC 000	0	FC 000	0
FC 000	0	USAF	0	USAF	1
USAF	<u>0</u>		<u>16</u>		<u>17</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSE 201	3
GSC-2	3	GSC-2	3	GSC-2	3
A/C 251a	4	A/C 251b	4	A/C 251c	4
Mktg 225	3	Econ 214	3	Econ 215	3
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	17		17		16

Third Year

Mgt 340	4	Mktg 325	4	Mgt 320	5
Mgt 371	4	Mgt 361	3	Mgt 473	4
GSA-3	3	GSA-3	3	Mgt 327	3
Mgt 380	<u>4</u>	Electives	<u>7</u>	GSB 311	<u>3</u>
	15		17		16

Fourth Year

GSC-3	3	GSB-3	3	GSC-3	3
Mgt 475	4	Mgt 421	4	Mgt 481	3
Electives	9	Electives	9	Mgt 479	4
	<u>16</u>		<u>16</u>	Mgt 385	4
	16		16	Electives	<u>2</u>
					16

Management (Personnel)

School of Business

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB-1 (waive)	0	GSC 102	3	GSC 103	3
GSC 100 or 101	3	GSD 101b	3	GSD 103	3
GSD 101a	3	GSD 108b	3	GSD 110	3
GSD 108a	3	GSB 201c	3	GSB 201b	3
GSB 201a	3	GSE PE	1	GSE PE	1
GSE PE	1	FC 000	0	FC 000	0
FC 000	0	USAF	0	USAF	1
USAF	<u>0</u>		<u>16</u>		<u>17</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSE 201	3
GSC-2	3	GSC-2	3	GSC-2	3
A/C 251a	4	A/C 251b	4	A/C 251c	4
Mktg 225	3	Econ 214	3	Econ 215	3
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	17		17		16

Third Year

Mgt 340	4	Mktg 325	4	Mgt 385	4
Mgt 371	4	Mgt 382	3	Mgt 320	5
GSA-3	3	GSA-3	3	Mgt 473	4
Mgt 380	4	Mgt 361	3	GSB 311	3
	<u>15</u>	Electives	<u>4</u>		<u>16</u>
	15		17		16

Fourth Year

GSC-3	3	GSB-3	3	GSC-3	3
Mgt 480	4	Mgt 485	4	Mgt 481	3
Electives	9	Electives	9	Mgt 479	4
	<u>16</u>		<u>16</u>	Electives	<u>6</u>
	16		16		16

Marketing

School of Business

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a	3	GSD 108b	3	GSD 110	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSC-2	3
GSC-2	3	GSC-2	3	USAF	0
GSE 201	3	USAF	1	Acct 251c	4
USAF	1	Acct 251b	4	Econ 215	3
Acct 251a	<u>4</u>	Econ 214	<u>3</u>	Mktg 225	<u>3</u>
	17		17		16

Third Year

GSA-3 ²	3	GSA-3 ²	3	GSB-3	3
Mktg 325	4	Mgt 320	5		
Mgt 340	4				
Mgt 371	4				

Fourth Year

GSC-3 ²	3	GSB-3 ²	3	GSC-3 ²	3
Mktg 490	4			Mgt 481	4

¹During his third and fourth years, the student must complete all University and departmental requirements. Departmental requirements (in addition to those shown) include Mktg 333, 341, 438, and 17 additional hours.

²During his third and fourth years, the student must elect no less than 18 hours of advanced General Studies courses, to be distributed as follows: Area A, 6 hours; Area B, 6 hours; and Area C, 5 hours.

Mathematics

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a ¹	3	GSD 114b ¹	3	Math 150a ¹	
GSE 201	3	GSD 114c ¹	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	<u>0</u>	USAF	<u>0</u>		<u>16</u>
	16		16		

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 211a ²	3	GSB 211b	3	GSB 211c or 201b	3
GSB 201a	3	GSB 201c	3	Guid 305	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	USAF	1	USAF	0
Math 150b ¹	<u>5</u>	Math 252a ¹	<u>5</u>	Math 252b ¹	<u>4</u>
	18		18		17

Third Year

GSA-3	3	GSA-3	3	SEd 310	4
GSD FL ³	3	GSD FL ³	3	GSD FL ³	3
Math 320a or		Math 320b or		Math 311	3
335a	3	320a	3	Math 335b or	
Phys 211a	5	Math 335a or		320b	3
GSB 331	3	335b	3	Eng 391 or	
		Secondary		Secondary	
	<u>17</u>	concentration 3-5		concentration	<u>3</u>
		15-17			16

Fourth Year

GSC-3	3	GSC-3	3	Student teaching	
Math elective	3	GSB-3	3	352	12
Math-4	3-4	Math-4	3-4	Secondary	
Educ. req.	4	Educ. req.	3-4	concentration 3-5	
Secondary		Secondary			
concentration 3-4	<u>16-18</u>	concentration 3-4	<u>15-18</u>		<u>15-17</u>

The student must spend some summers in school in order to complete a teaching secondary concentration of 30 or more hours, to take 16 hours of student teaching, and to take additional mathematics courses which a well-prepared teacher should have. The alternative is to gain credit for some courses by proficiency examinations.

¹A student may take a proficiency exam for credit in any or all of these courses. He should enroll in 114b, 114c, or 150a

Mathematics

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b ¹	3	GSD 103	3
GSD 114a ¹	3	GSD 114b ¹	3	Math 150a ¹	5
Elective	3	GSD 114c ¹	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	0	USAF	0		
	<u>16</u>		<u>16</u>		<u>16</u>

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
Phys 211a ²	5	GSC-2	3	GSC-2	3
USAF	1	USAF	1	GSE 201	3
Math 150b ¹	5	Math 252a ¹	5	USAF	0
	<u>17</u>		<u>15</u>	Math 252b ¹	4
					<u>16</u>

Third Year

GSA-3	3	GSA-3	3	Secondary	
GSC-2	3	Secondary		concentration 3-5	
GSD FL ³	3	concentration 3-5		Secondary	
Secondary		GSD FL ³	3	concentration 3-5	
concentration 3-5		Math 421a or		GSD FL ³	3
Math 305a or		320a	3	Math 421b or	
other	3	Math 305b or		320b	3
		other	3	Math 407 or	
	<u>15-17</u>		<u>15-17</u>	other	3
					<u>15-17</u>

Fourth Year

GSB-3	3	GSB-3	3	Secondary	
Math 452a	3	GSC-3	3	concentration 3-5	
Math	3	Math 452b	3	GSC-3	3
Secondary		Math	3	Math 452c	3
concentration 3-5		Secondary		Math	3
		concentration 3-5		Secondary	
	<u>15-17</u>		<u>15-17</u>	concentration or	
				Math	3-5
					<u>15-17</u>

¹A student may take a proficiency exam for credit in any or all of these courses. He should enroll in 114b, 114c, or 150a during his first quarter as a freshman if his high school background and the advanced mathematics placement test indicate his beginning with a course higher than GSD 114a.

²Phys 211a (or 206a) is required for mathematics concentration; 211b,c (206b,c) are recommended.

³French, German, or Russian is recommended as the foreign language. This college requirement can be met by passing an examination or by 3 hours of credit in the intermediate level of one foreign language.

Each student with a concentration in mathematics must make an appointment with a member of the mathematics faculty to discuss the choice of mathematics courses to be taken during his junior and senior years.

FIRST YEAR OPTIONS: Foreign language sequence; courses in a possible secondary concentration.

SECOND YEAR OPTIONS: Foreign language sequence; General Studies first level sequences not completed; courses in secondary concentration.

Microbiology

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive).	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	Chem 111c	5
Chem 111a	5	Chem 111b	5	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	<u>0</u>	USAF	<u>0</u>		<u>18</u>
	18		18		

Second Year

GSC-1	3	GSC-1	3	GSC-1	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE 201 or		GSE 201 or		Chem 235 or	
Micr 301	3-5	Micr 301	3-5	Chem 341c	5
Chem 305a or		Chem 305b or		Micr 302	5
Chem 341a	4	Chem 341b	4-5	USAF	0
GSE PE	1	USAF	1		
Electives	<u>0-3</u>	Electives	<u>1-4</u>		<u>16</u>
	17-18		16-18		

Third Year

GSA-3	3	GSA-3	3	GSB-2	3
GSB-2	3	GSB-2	3	GSC-2	3
GSC-2	3	GSC-2	3	Chem 235 or	5
Chem 221	3	Micr 422, 423		Micr 441 or	6
Micr 425-26 or		or 451 or	5-6	electives	5-7
403	<u>5</u>	electives	<u>3-9</u>	Math 150a	<u>5</u>
	17		17-18		16-18

Fourth Year

GSB-3	3	GSC-3	3	Micr 441	6
GSC-3	3	GSC-3	3	and/or	
Micr 425-26		Micr 422 or 423	5	electives	6-12
or 403		or 451	6	Phys 206c	5
Electives	0-2	Phys 206b	5		
Phys 206a	<u>5</u>		<u>16-17</u>		<u>17</u>
	16-18				

A concentration in microbiology consists of a minimum of 48 hours and must include GSA 201, 202, 203 (4 hours credit), biology, Micr 301, 302, 403, 425, 426, 451, 441. Additional courses will be selected from the catalog with the approval of the departmental adviser. Some suggested courses include the following: Micr 401-1, 422-5, 423-5, 424a-2, Zool 306-4, 320-4, 401-5, 406-4, 407-5, Phs1 430, 431, 432, Bot 355-5.

Applied Music

School of Fine Arts

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB-1	3	GSB-1	3	GSB-1	3
GSD 101a	3	GSD 101b	3	GSD 101c	3
GSC-1 (waive)	0	GSC-1 (waive)	0	GSC-1 (waive)	0
GSE PE	1	GSE PE	1	GSE PE	1
Mus 105a	4	Mus 105b	4	Mus 105c	4
Mus (applied)	4	Mus (applied)	4	Mus (applied)	4
Ensemble	1	Ensemble	1	Ensemble	1
FC 000	0	FC 000	0	FC 000	0
Mus (class piano if not piano concentration) <u>1</u>		Mus (class piano) <u>1</u>		Mus (class piano) <u>1</u>	
	16-17		16-17		16-17

Second Year

GSA-1	3	GSA-1	3	GSA-1	3
GSB-2	3	GSE-2	3	GSB-2	3
GSC 206		GSD FL	3	GSD FL	3
(proficiency) (3)		Mus 205a	3	Mus 205a	3
GSD FL	3	Mus (applied)	4	Mus (applied)	4
Mus 205a	3	Mus Ensemble	1	Mus Ensemble	1
Mus (applied)	4	Mus (class		Mus (class	
Ensemble (mus)	1	piano)	1	piano)	1
Mus (class piano, if proficiency not attained) <u>1</u>					
	17-18		17-18		17-18

Third and Fourth Years

GSA-2	3	GSA-2	3	GSA-2	3
GSC-2	3	GSC-2	3	GSA 361	3
GSC 357a	3	GSC 357b	3	GSC 357c	3
GSE-3	3	GSB-3	3	GSE 201	3
GSA-3	3				

For information concerning concentration requirements consult the Undergraduate Catalog and, if necessary, Professor Roderick Gordon, Old Main 106.

Music History-Literature or Theory-Composition School of Fine Arts

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1 (waive)	0	GSC-1 (waive)	0	GSC-1 (waive)	0
GSD 101a	3	GSD 101b	3	GSD 101c	3
FC 000	0	FC 000	0	FC 000	0
Mus 105a	4	Mus 105b	4	Mus 105c	4
Mus (applied)	2	Mus (applied)	2	Mus (applied)	2
Mus Ensemble	1	Mus Ens	1	Mus Ens	1
Mus (class piano if not piano concentration) <u>1</u>		Mus (class piano) <u>1</u>		Mus (class piano) <u>1</u>	
	17-18		17-18		16-17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC		GSD FL	3	GSD FL	3
(proficiency) (3)		GSE PE	1	Mus 205c	3
GSD FL	3	Mus 205b	3	Mus (applied)	2
GSE PE	1	Mus (applied)	2	Mus Ens	1
Mus 205a	3	Mus Ens	1	Mus (class piano) <u>1</u>	
Mus (applied)	2	Mus (class piano) <u>1</u>			
Mus Ensemble	1				
Mus (class piano) <u>1</u>					
	16-17		16-17		15-16

Third and Fourth Years

GSC-2	6	GSA-3	3	GSB-3	3
GSA 361	3	GSB-3	3	GSE 201	3
GSC 357a	3	GSC 357b	3	GSC 357c	3
GSE PE	1				

For information concerning concentration requirements consult the Undergraduate Catalog and, if necessary, Professor Roderick Gordon, Old Main 106.

Music

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1 (waive)	0	GSC-1 (waive)	0	GSC-1 (waive)	0
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
Mus 105a	4	Mus 105b	4	Mus 105c	4
Mus (applied)	2	Mus (applied)	2	Mus (applied)	2
Ensemble or class piano (by advisement)	<u>1</u>	Mus 040	1	Mus 040	1
	17		17		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201b	3	GSB 201b	3
GSC 206		GSC-2	3	GSC-2	3
(proficiency) (3)		GSD FL	3	GSD FL	3
GSD FL	3	Mus 205b	3	Mus 205c	3
Mus 205a	3	Mus (class piano		Mus (class piano	
Mus (applied)	2	or ensemble)	1	or ensemble)	1
Mus (class piano					
or ensemble)	<u>1</u>				
	15		16		16

Third and Fourth Years

GSA 361	3	GSA-3	3	GSB-3	3
GSE 201	3	GSB-3	3	GSC 357c	3
GSC 357a	3	GSC 357b	3		
2 quarters of applied music	4				

To be consistent with the Edwardsville Campus course numberings, some of the above course numbers will be changed before being printed in the catalog.

Nursing

Department of Nursing

First Year

At Carbondale

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>	<u>Summer</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3	GSA 201a	3
GSB-1 (Waive)	0	Chem 101b	1	Chem 101c	1	GSB 201b	3
GSB 201a	3	GSB 201c	3	GSD 103	3	GSC-1	3
GSC-1	3	GSC-1	3	GSD Math or		GSC 208	3
GSD 101a	3	GSD 101b	3	FL	3	GSC-2	3
GSD Math or		GSD Math or		FC 000	0	GSE PE	1
FL	3	FL	3	Phs1 300	4		
Nurs 101a	1	Nurs 101b	1	Nurs 101c	1		
FC 000	0	FC 000	0				
	<u>16</u>		<u>17</u>		<u>15</u>		<u>16</u>

Second Year

At Carbondale

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 201b	3	GSA 201c	3	Psyc 301	4
GSA 301	4	Soc 340	4	GSA-3	3
GSC-2	3	F&N 103	4	GSB-3	3
GSC 310	3	Micr 301	5	Nurs 303	3
GSE PE	2				
	<u>15</u>		<u>16</u>		<u>13</u>

At East St. Louis

Third Year

At East St. Louis

GSB-3	3	GSE 201	3	GSC-3	3
Nurs 301	8	Nurs 302	8	Nurs 363a	9
Nurs 381	3	Nurs 355	4	Elective	3
	<u>14</u>		<u>15</u>		<u>15</u>

Fourth Year

At East St. Louis

Nurs 325	8	Nurs 363b	6	Nurs 363c	8
HED 355	4	Nurs 375	8	Nurs 382	6
	<u>12</u>		<u>14</u>	Nurs 384	2
					<u>16</u>

Philosophy

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	FC 000	0	FC 000	0
FC 000	0	USAF	0	USAF	1
USAF	0	Elective	3	Elective	3
Elective	<u>3</u>		<u>15</u>		<u>16</u>
	16				

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC 207 or 208	3
GSD 108a or FL	3	GSD 108b or FL	3	GSD 108c or FL	3
GSE 201	3	GSE PE	1	GSE PE	1
USAF	1	USAF	1	USAF	0
	<u>16</u>	Elective	<u>3</u>	Elective	<u>3</u>
			17		16

Third Year

GSC 381	3	GSC 382	3	GSC 383	3
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The two third-level courses in each of Areas A and B may be worked in as may be convenient in terms of the rest of the program.

All the rest of the student's program should be worked out on an individual basis in conference with advisers, the concentration work in consultation with the concentration advisor in the department. The secondary concentration program will vary from student to student and must be worked out with the concentration adviser and a consultant in the secondary concentration department.

Photography

School of Communications

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSC-2	3
GSE PE	1	GSE PE	1	GSD 103	3
FC 000	0	FC 000	0	GSE PE	1
USAF	0	USAF	0	FC 000	0
Art 100a	<u>6</u>	Art 100b	<u>6</u>	USAF	<u>1</u>
	19		19		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
USAF	1	USAF	1	USAF	0
P&P 260a	<u>4</u>	P&P 260b	<u>4</u>	P&P 260c	<u>4</u>
	17		17		16

Third Year

GSA,B,C	6	GSA,B,C	6	GSA,B,C	3
P&P 341a	4	P&P 341b	4	P&P 341c	3
P&P 309a	4	P&P 309b	4	P&P 309c	4
		Elective	2	P&P 345a	3
	<u>14</u>		<u>15</u>	P&P 391 or 392	<u>3</u>
					16

Fourth Year

P&P 345b	3	P&P 303	4	P&P 391 or 392	3
P&P 360a	3	GSA,B,C	3	Elective	12
Elective	<u>8</u>	Elective	<u>7</u>		<u>15</u>
	14		14		

Some options in the concentration are available in the junior and senior years, depending on whether the student is interested in general photography, commercial photography, or photo journalism. The student should consult the department chairman about these options.

Physical Education (Men)

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108 ^a	3	GSD 108 ^b	3	GSD 108 ^c	3
PEM 181 ¹	1	PEM 182 ¹	1	PEM 183 ¹	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
PEM	<u>1</u>	PEM	<u>1</u>	PEM	<u>1</u>
	17		17		18

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSA 301	4	GSB-2	3	GSB-2	3
GSB-2	3	GSC-2	3	GSC-2	3
GSC-2	3	USAF	1	GSE 201	3
USAF	1	PEM ²	3	USAF	0
PEM ²	<u>3</u>	Phsl 300	<u>4</u>	PEM 303	<u>5</u>
	17		17		17

Third Year

GSA-3	3	GSB-3	3	GSC-3	3
GSB 331	3	GSC-3	3	PEM	6
PEM	8	PEM	4	Education	3
Education	4	Education	4	Secondary	
	<u></u>	Elective	<u>3</u>	concentration	<u>6</u>
	18		17		18

Fourth Year

PEM	5	PEM	2	Student	
Secondary		Secondary		Teaching	12
Concentration	12	concentration	12	Education	3
	<u></u>	Education	<u>3</u>		<u></u>
	17		17		15

¹PEM 181, 182, 183 satisfy the GSE requirement.²101-2 during fall or winter of second year.

Physical Education (Women)

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
FC 000	0	FC 000	0	FC 000	0
PEW 114 ¹	1	PEW 113 ¹	1	PEW 211 ¹	1
PEW 222	<u>1</u>	PEW ²	<u>1</u>	PEW 228	<u>1</u>
	17		17		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSB 331	3	GSC-2	3	SEd 310	4
GSC-2	3	GSC-2	3	PEW 350	5
GSE 201	3	Guid 305	4	PEW 355	3
PEW 212 and 244	2	PEW 224 and 242	2		
PEW ²	<u>1</u>				
	18		18		18

Third Year

GSA 301	4	PEW 304c	2	GSC-3	3
PEW 352	2	PEW 308	5	PEW 353	4
PEW 354	2	PEW 351	4	PEW 304e	2
PEW 304a	2	PEW 311b or		PEW 303	5
PEW 304b	2	376 or		Eng 391 or	
PEW 370	4	GSE 113e	1	proficiency	3
PEW 311a or 374	1	PEW 304d	2		
	<u>17</u>	Phsl 300	<u>4</u>		
			18		17

Fourth Year

GSA-3	3	GSC-3	3	Student	
GSB 300a	3	Hist 203 or		Teaching	16
HEd 334	4	GSB 211b	4		
HEd 460	4	IM 417 or			
PEW ²	1	elective	4		
	<u>15</u>	Elective	<u>3</u>		
			14		16

¹PEW 114, 113 and 211 satisfy the GSE-1 requirement.²Must take one of the following: GSE 114a,b,m,e,i, or PEW 317.

Physical Science College of Education
 (Teach Chemistry-Physics-Biology and General Science)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
Chem 111a	5	Chem 111b	5	Chem 111c	5
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	15		15		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
Phys 206a	5	Phys 206b	5	Phys 206c	5
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	18		18		17

Third Year

GSA 301	3	GSE 201	3	GSB 201c	3
Micr 301	5	Zool 102	5	Zool 103	5
Astr	4	Bot 300	3	Bot 301	3
GSB 300a	<u>3</u>	Guid 305	<u>4</u>	Phys 310	<u>5</u>
	15		15		16

Fourth Year

SEd 310	4	GSC elective	3	S teaching	12-16
SEd elective	4	SEd 315	3	SEd elective	4
GSC elective	3	GSA-3	3		
Chem 305	4	Chem 230	4		
	<u>15</u>	Chem 305b	<u>17</u>		<u>16</u>

Total hours 193 or more

Senior hours 68 hours

Chem 27 hours

Physics 24 hours

Biology 37 hours

Educ 30 plus GSB 331

Meets all general Education Requirements

Physics

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSC-1	3
GSD 114a ¹	3	GSD 114b, 114c	6	GSD 103	3
GSE PE	1	GSE PE	1	Math 150a	5
FC 000	0	FC 000	0	GSE PE	1
USAF	0	USAF	0	FC 000	0
Chem 111	5	Chem 112	5	USAF	1
	<u>15</u>		<u>18</u>		<u>15</u>

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSC-1	3	GSC-1	3	GSB 211a	3
USAF	1	USAF	1	USAF	0
Math 150b	5	Math 252a	5	GSE 201	3
GSB 201a	3	Phys 211b	5	Math 252b	4
				Phys 211c	5

Third Year

Phys 305a	5	Phys 301a	4	Phys 301b	4
Math 305a	3	Phys 305b	5	Phys 310	5
GSB 201c	3	Math 305b	3	Math 407	3
GSC-2	3	GSB 201b	3	GSC-2	3
GSC-2	3	GSD FL	3	GSD FL	3
GSD FL	3				
	<u>20</u>		<u>18</u>		<u>18</u>

Fourth Year

Phys 413a	4	Phys 413b	4	Phys 414 or 450	5
Phys 405	5	Phys 304	3	Elective ²	3
Elective ²	3	Elective ²	3	GSB-3	3
GSA-3	3	GSA-3	3	Elective	6
GSC-3	3	GSB-3	3		
	3	GSC-3	3		
	<u>18</u>		<u>19</u>		<u>17</u>

¹If a student received advanced standing in GSD 114a, he should take 114b fall quarter.

²Suggested electives:

For theoretical Physicists: Math 452a,b,c;

For others: A year of foreign language.

Physiology (Professional) College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSA 201a	3	GSA 201b	3	GSA 201c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math	3	GSD Math	3	GSD Math	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Chem 111c	<u>5</u>
	18		18		19

Second Year

GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
USAF	1	USAF	1	USAF	0
Chem 305a	4	Chem 305b	4	Chem 235	5
Zool 103	<u>5</u>	Zool 202	<u>5</u>	Zool 300	<u>5</u>
	16		16		16

Third Year

GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
Phys 206a	5	Phys 206b	5	Phys 206c	5
Phsl 315a	<u>5</u>	Phsl 315b	<u>5</u>	Phsl 315c	<u>5</u>
	16		16		16

Fourth Year

GSA-3	3	GSA-3	3	GSE 201	3
GSB-3	3	GSB-3	3	Phsl elective	11
GSE-3	3	GSC-3	3	Elective	4
Phsl elective	<u>8</u>	Phsl elective	<u>8</u>		
	17		17		18

This course of study is only for those who wish to become professional physiologists. It will be varied individually for premedical technologists and similiar preprofessional students who wish to concentrate in physiology.

Plant Industries

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a ¹	3	GSA 101b ¹	3	GSA 101c ¹	3
GSC-1	3	Chem 101b	1	Chem 101c	1
GSD 101a	3	GSC-1	3	GSD 103	3
GSD 108a or 114a ¹	3	GSD 101b	3	GSD 108c or 114c	3
GSE PE	1	GSD 108b or 114b	3	GSE PE	1
FC 000	0	GSE PE	1	FC 000	0
USAF	0	FC 000	0	USAF	1
Ag elective ²	4	USAF	0	Ag elective ²	4
		Ag elective ²	4		
	<u>17</u>		<u>18</u>		<u>16</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c or GSA 200 ¹ & Geol 200	3
GSB 201a	3	GSB 201c	3		1
GSB 211a	3	GSB 211b	3	GSB 201b	3
GSC-1	3	GSC-2	3	GSB 211c	3
USAF	1	USAF	1	GSC-2	3
Ag elective ³	3-4	Ag elective ³	3-4	USAF	0
				Ag elective ³	3-4
	<u>16-17</u>		<u>16-17</u>		<u>15-17</u>

Third Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB-3 or 314	3	GSB-3 or 314	3	GSE 201	3
GSC-2	3	Basic sciences,		Basic sciences,	
GSC-3	3	PlI, other Ag		PlI, other Ag	
Basic sciences,		electives ⁴	11-12	electives ⁴	11-12
PlI, other Ag					
electives ⁴	5-6				
	<u>17-18</u>		<u>17-18</u>		<u>17-18</u>

Fourth Year

PlI, other Ag		PlI, other Ag		PlI, other Ag	
electives	12-18	electives	12-18	electives	12-18

¹If noncredit Math 106 is required, delay GSA 101a until following quarter. A student with a science background and ACT score of 75 in natural sciences should take GSD 114 and may well substitute Chem 111 for GSA 101b. It is possible to take Chem 112 and 305 after completion of GSA 101b with a grade of B or better. It is highly recommended that those with a concentration in PlI enroll in Chem 101b and c at the time of enrollment in GSA 101b and c. Those enrolling in GSA 200 should concurrently enroll in Geol 200.

²Selection to fit the student's area of interest and to fulfill prerequisites may be made from the following agricultural courses: AgI 215; AnI 105, 125, 231; PlI 103, 264.

³Selection may be made from courses listed immediately above plus any 300-level courses in PlI. In addition AgI 350 or 354; AnI 315; PlI 302 are strongly recommended for PlI concentration.

⁴Students with a concentration in PlI may study in the areas of Agric. chemicals, field crops, fruits, ornamentals, soils, or vegetables and elect such basic courses as support these areas. Urgently recommended science courses outside of Agriculture include Bot 315, 320; Chem 235, 305a,b, or 350 (terminal) and Micr 301.

Printing Management

School of Communications

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD Math	3
GSD Math	3	GSD Math	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	<u>0</u>	USAF	<u>0</u>	P&P 217	<u>4</u>
	16		16		18

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD 103	3	GSE 201	3	USAF	0
USAF	1	USAF	1	P&P 271b, 314	6
P&P 265	<u>4</u>	P&P 271a	<u>4</u>		
	17		17		15

Third Year

GSA-3	3	P&P 302	3	GSA-3	3
GSB-3	3	P&P 308b	3	Elective	2
P&P 308a	4	P&P 365	3	P&P 366	3
P&P 312	3	Acct 250	4	Mktg 225	3
Econ 214	<u>3</u>	Econ 215	<u>3</u>	Econ 310	<u>4</u>
	16		16		15

Fourth Year

GSC-3	3	GSB-3	3	P&P 379c	3
P&P 381a	3	GSC-3	3	P&P 384	3
P&P 379a	3	P&P 381b	3	Mgt 385	4
Mgt 340	4	P&P 379b	3	Elective	3
Mgt 371	<u>4</u>	Mgt 380	<u>4</u>		
	17		16		13

Psychology

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 ¹	3-5	GSA-1 ¹	3-5	GSA-1 ¹	3-5
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16-18		16-18		17-19

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201c	3	GSB 201a	3	GSB 201b	3
GSC-2 ²	3	GSC-2 ²	3	GSC-2 ²	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE 201	3	Psyc 211a	4	Psyc 211b	4
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	17		17		17

Third and Fourth Years

Students declaring a concentration in psychology must see Dr. Carr for assignment to a department adviser.

Required General Studies courses are:

GSA 301	3	GSA-3	3	GSB-3	3
GSB	3	GSC-3	3	GSC-3	3

The 43-hour concentration may be completed by following one of two sequences: A pregraduate sequence (for students planning to do graduate work in psychology) or a terminal sequence (for students planning no graduate work in psychology). Required in both sequences and counting toward the 43 hours, are GSB 201c and Psyc 211a,b; required in both, but not counting toward the 43 hours, is GSA 301.

Additional psychology courses required of those having concentrations in the two sequences are indicated below. Where options are indicated, courses should be chosen by the student in consultation with his department advisor.

Pregraduate Sequence:

311 and at least one: 312, 313, 314.

At least two: 301, 303, 304, 305, 307, 320, 322.

At least two: 404, 406, 407, 408, 409, 421, 431, 440, 451, 461, 471.

Terminal Sequence:

Select from 301, 303, 304, 305, 307, 311, 312, 313, 314, 320, 322, 404, 406, 407, 408, 409, 421, 431, 440, 451, 461, 471, including at least three from the 400 level.

Courses 323, 420, 432, 433, 438, and 465 may not be used to satisfy the concentration requirements, but are acceptable for the secondary concentration.

¹Department prefers the waiver of GSA 101 sequence in favor of any three quarters from Chem 111a,b,c and Phys 206a,b,c. GSA 101a,b,c sequence may be considered an alternative, however.

²Include GSC 208 in one quarter.

Radio-Television

School of Communications

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	USAF	1	USAF	0
USAF	1	R-T 252	3	R-T 274	5
R-T 251 ¹	3	R-T 273	3	R-T 351, 352, 373, 374, 393	<u>3</u>
	16		16		17

Third Year

GSA-3	3	GSA-3	3	R-T	8
GSB-3	3	GSB-3	3	Secondary	
GSC-3	3	GSC-3	3	concentration	6
R-T	4	R-T	4	Elective	3
Secondary concentration	<u>4</u>	Secondary concentration	<u>4</u>		
	17		17		17

Fourth Year

R-T	5	R-T	5	R-T	5
Secondary concentration	5	Secondary concentration	5	Elective	11
Elective	<u>5</u>	Elective	<u>5</u>		
	15		15		16

¹Students should take 251, 252, 273, and 274 as soon as possible. Other required courses for students with the R-T concentration are: 351, 352, 373/374 (8-12), and 393. The secondary concentration should be related to the field of Broadcasting. The sequence of courses in both the secondary concentration and the elective courses must be approved by Dr. Uray. The R-T student must also pass both a typing and English qualifying test.

Recreation and Outdoor Education

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD Math	3
GSD Math	3	GSD Math	3	GSE PE	1
GSE PE	1	GSE PE	1	FC 000	0
FC 000	0	FC 000	0	USAF	1
USAF	<u>0</u>	USAF	<u>0</u>	Elective	<u>3</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	Acct 250 ¹	4	GSD 103	3
Rec 201	4	Rec 202	4	Mgt 170 ¹	4
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	17		18		16

Third Year

GSA 302	3	GSA 312	3	Rec 220	4
GSB 331 or 303	3	GSB 212	3	Rec 230	4
GSC 313	3	GSB 321	3	Rec 302	4
Rec 301	4	GSC-3	3	Govt 232 ¹	5
Mus 307	4	Rec 365 ¹	2		
	<u>4</u>	HED 334	<u>4</u>		
	17		18		17

Fourth Year

Rec 315	4	Rec 310	3	Rec 305	4
Electives ²	4	Electives ²	8	Electives ²	8
Rec 360 ¹	4	Field		Field	
Guid 305	<u>4</u>	recreation ³	<u>6</u>	recreation ³	<u>6</u>
	16		17		18

¹Students with a concentration in Institutional recreation must contact the Department for a course to be substituted for this course. In addition, it is recommended that 203, 204, and 207 be selected as GSC requirements for the second level.

²Electives may be chosen from the department's brochure or with consent of the department.

³Must have consent of the department.

Small Business Management

Small Business Institute

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a or 114a	3	GSD 108b or 114b	3	GSD 110	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c or 200	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	USAF	1	USAF	0
USAF	1	Acct 251b	4	Acct 251c	4
Acct 251a	<u>4</u>	Econ 214	<u>3</u>	Econ 215	<u>3</u>
	17		17		16

Third Year

GSA-3	3	GSA-3	3	GSB-3	3
GSB-3	3	GSC-3	3	GSC-3	3
Mktg 225	3	Mktg 325	4	Mktg 337	4
Mgt 371	4	Elective	6	Mgt 320	5
Elective	<u>3</u>		<u>--</u>		<u>--</u>
	16		16		15

Fourth Year

Mgt 364 ¹	4-12	Mktg 333	4	Mgt 472	5
Mgt 340	4	Mgt 481	3	Mgt 360	5
Electives	0-8	Mgt 327	4	Mgt 421	4
	<u>--</u>	Electives	<u>5</u>	Elective	<u>3</u>
	16		16		17

¹Normally taken during summer quarter; fall quarter schedule adjusted accordingly.

Note: For some fields electives will be at least partially used for technical (nonbusiness) courses related to the business interest, and in some cases it is desirable to start these courses prior to the third year. The Small Business Institute will work with General Studies advisers in such instances. Adequate preparation in some areas will require more than twelve quarters.

Social Studies

College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math	3	GSD Math	3	GSD 110	3
GSE PE	1	GSE PE	1	GSE PE	1
USAF	0	USAF	0	USAF	1
FC 000	0	FC 000	0	FC 000	0
	<u>16</u>		<u>16</u>		<u>17</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSB 211a	3	GSB 211b	3	GSE 201	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	USAF	1	USAF	0
GSB 300a	3	GSB 300b	3	Econ 214	
	<u>16</u>		<u>16</u>	GSB 300c	<u>3</u>
					<u>16</u>

The social studies field concentration consists of 96 hours in history, economics, government, sociology, and geography. Twenty-four hours must be in history, 24 in each of two other areas, and 12 in each of the remaining two areas. No secondary concentration is required. The history sequence and two other 24-hour sequences must be selected from the following five sequences.

1) History: GSB 101b,c, 300a,b,c, 6 hours of world history, and 3 hours of American history.

2) Economics: GSB 211a, Econ 214, 215, and 15 hours of electives.

3) Government: GSB 211b,c, Govt 232, and 13 hours of electives.

4) Sociology: GSB 201b, a third-level GSB course for 3 hours and 18 hours of electives.

5) Geography: GSB 101c, Geog 304, 306, 308, and 6 hours of electives.

For third and fourth years, consult Dr. Claude Dykhous, College of Education, Academic Advisement.

Sociology (General)

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a ¹	3	GSD 108b ¹	3	GSD 108c ¹	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE 201	3	Elective ²	4	Elective	4
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	16		17		16

Third Year

GSA-3	3	GSA-3	3	Electives	16
GSB 321	3	GSB-3	3		
GSC-3	3	GSC-3	3		
Electives	<u>6</u>	Electives	<u>7</u>		
	15		16		16

Fourth Year

Soc 407	4	Soc 451	4	Electives	16
Soc 412	5	Electives	12		
Electives	<u>6</u>		<u>16</u>		<u>16</u>
	15				

¹Students who have had at least one and a half years of high school algebra should take Math 220 instead.

²In selecting electives, the student should complete at least 42 hours of sociology courses whose second digit is not eight and should take a secondary concentration.

Sociology (Social Work)

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a ¹	3	GSD 108b ¹	3	GSD 108c ¹	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE 201	3	Elective	3	Elective	4
USAF	<u>1</u>	USAF	<u>1</u>	USAF	<u>0</u>
	16		16		16

Third Year

GSA-3	3	GSA-3	3	Soc elective	3
GSB 321	3	GSB-3	3	Soc elective	3
GSC-3	3	GSC-3	3	Govt elective	3
Soc 380	4	Govt elective	5	Econ elective	3
Soc 383	<u>4</u>	Elective	<u>3</u>	Elective	<u>4</u>
	17		17		16

Fourth Year

Soc 407	4	Soc 481	4	Soc 482	3
Soc 412	5	Electives	11	Electives	12
Electives	<u>6</u>				
	15		15		15

¹Students who have had at least one and a half years of high school algebra should take Math 220 instead.

Speech

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
GSD FL	3	GSD FL	3	GSD FL	3
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
GSE 201	3	USAF	1	USAF	0
Spch 102	4	GSC 200	3	Spch 200	4
USAF	<u>1</u>	Spch 202	<u>3</u>	Spch 205	<u>3</u>
	17		17		17

Third Year

GSA-3	3	GSA-3	3	Spch 323	4
GSB-3	3	GSB-3	3	Electives	12
GSC-3	3	GSC-3	3		
Spch	4	Spch 304	4		
Spch	<u>4</u>	Elective	<u>4</u>		
	17		17		16

Fourth Year

Spch 434 or 407a	4	Spch 423 or 407b	4	Spch 449 or 408 or 417	4
Electives	<u>12</u>	Electives	<u>12</u>	Electives	<u>12</u>
	16		16		16

Speech

School of Communications

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	GSE 201	3	USAF	0
Spch 102	4	USAF	1	Spch 200 or 104	4
Spch 201	2	Spch 103	4	Spch 202	3
	<u>16</u>	Spch 209	<u>1</u>		<u>16</u>
			18		

Third Year

GSA-3	3	GSA-3	3	Spch 408	4
GSB-3	3	GSB-3	3	Spch electives	12
GSC-3	3	GSC-3	3		
Spch 213	4	Spch 301	4		
Spch 205	<u>3</u>	Spch electives	<u>4</u>		<u>16</u>
	16		17		

Fourth Year

Spch 304	3	Spch 413, 417,		Electives	8-16
Spch 407a or		or 418	4		
407b	4	Electives	12		
Electives	<u>10</u>		<u>16</u>		<u>8-16</u>
	17				

Total hours in
Speech 60
Required 44
Electives 16

60 hours are required in Speech. Forty-four are specified above.

Speech (teaching)

School of Communications
and College of Education

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103 ¹	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-2	3	GSB-2	3	GSB 201c	3
GSC 203	3	GSC 200 ¹	3	GSC-2	3
GSE 201	3	USAF	1	USAF	0
USAF	1	Spch 202	3	Guid 305	4
Spch 102	<u>4</u>	Spch 104 or 200	<u>4</u>	Spch 205	<u>3</u>
	17		17		16

Third Year

GSA-3	3	GSA-3	3	R-T 367	3
GSB-3	3	GSB-3	3	Ed 417	4
GSC-3	3	GSC-3	3	Spch 323	4
Spch 209	1	Thea 402a	4	Thea 208	1
Thea 111a,b, or c	3	Spch/Thea elective	4	Electives	4
Spch/Thea elective	<u>4</u>		<u>17</u>		<u>16</u>
	17		17		16

Fourth Year

Spch 406 ²	4	SpC 428	4	Ed 352	
Eng 391	4	Guid 422a	4		
Ed 310	4	Spch 427	4		
Spch/Thea elective	<u>4</u>	Electives	<u>4</u>		
	16		16		8-16

¹Although these GS courses do not count toward the 48-hour concentration they are prerequisite to several of the required courses and should be elected at the General Studies level.

²Methods 406 (formerly 306) is required for certification and does not count toward the concentration. 48 hours are required for the concentration. 38 are specified above.

One secondary concentration is required for those being certified to teach speech. An English or Social Studies secondary concentration is recommended.

Thirty hours required for the speech secondary concentration. Students should check with the chairman of the Department of Speech for assignment to a secondary concentration adviser.

Speech Correction

College of Education, and
School of Communications

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-2	3	GSC-2	3	GSC-2	3
USAF	1	GSE 201	3	USAF	0
SpC 200	4	USAF	1	Guid 305	4
Eng 391	<u>3</u>	Elective	<u>4</u>	ElEd	<u>4</u>
	17		17		17

Third Year

GSA-3	3	GSA-3	3	SpC 415	4
GSB 331	3	GSB-3	3	SpC 203	4
GSC-3	3	GSC-3	3	SpC 319	4
SpC 212	4	SpC 318	4	SpE 200-2 or	
ElEd	<u>4</u>	Psyc 301	<u>4</u>	414-4	<u>2</u>
	17		17		14-16

Fourth Year

SpC 405a	4	SpC 405b	4	SpC 405c	4
SpC 406	4	SpC 412	4	Student	
Psyc 305	4	SpC 414	4	teaching	12
Guid 422	<u>4</u>	SpC 419	<u>4</u>		<u>16</u>
	16		16		

Theater

College of Education

(Same as Speech Teaching with 10 hours of electives in Theater)

Theater

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	Thea 111a	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
	<u>16</u>		<u>16</u>		<u>17</u>

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC 203	3	GSC-2	3	GSC 201	3
GSE-2	3	USAF	1	GSD 103	3
USAF	1	Thea 208	3	USAF	0
Thea 204	4	Electives*	4	Thea 314	4
	<u>17</u>		<u>17</u>		<u>16</u>

Third Year

GSA-3	3	GSA-3	3	Thea 308	3
GSB-3	3	GSB-3	3	Thea 354	3
GSC-3	3	GSC-3	3	Electives*	10
Thea 402a	4	Thea 354	3		
Thea 311	4	Eng 460	4		
	<u>17</u>		<u>16</u>		<u>16</u>

Fourth Year

Eng 460	4	Eng 471	4	Thea 403	4
Electives	12	Electives*	12	Thea 438	4
	<u>16</u>		<u>16</u>	Electives	8
					<u>16</u>

Theater courses chosen at random or according to the student's desire to specialize in one of the four following areas: directing and acting; scenic and costume design; playwriting and dramatic literature; theater history and theory.

Total hours in Theater: 63

Theater

School of Communications

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1	3	GSA-1	3	GSA-1	3
GSB-1	3	GSB-1	3	GSB-1	3
GSC 110	3	GSC 110	3	GSC 110	3
GSD 101a	3	GSD 101b	3	Thea 111a	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC 203	3	GSC 200	3	GSC 201	3
GSE-2	3	USAF	1	GSD 103	3
USAF	1	Thea 207	4	USAF	0
Thea 111b	<u>3</u>	Elective	<u>3</u>	Thea 204	<u>4</u>
	16		17		16

Third Year

GSA-3	3	GSA-3	3	GSC 340-3	4
GSB-3	3	GSB-3	3	Thea 432	4
GSC 305	3	GSC-3	3	Eng 460	4
Thea 402a	4	Thea 354	4	Electives	4
Thea 311	<u>4</u>	Thea 402b	<u>4</u>		
	17		17		16

Fourth Year

Thea 322	12	GSC 348	3	GSC 365	3
	<u>12</u>	Thea electives	<u>13</u>	Electives	<u>13</u>
			16		16

Total hours in theater: 63

Zoology

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a (waive) ¹	3	GSA 101b (waive) ¹	3	GSA 101c (waive) ¹	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a or 114a	3	GSD 108b or 114b	3	GSD 108c or 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a ²	3	GSB 201c ²	3	GSB 201b ²	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE 201	3	GSC-2	3	GSC-2	3
USAF	1	USAF	1	USAF	0
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Chem 111c	<u>5</u>
	18		18		17

Third Year

GSB-3	3	GSB-3	3	GSC-3	3
GSC-2	3	GSC-3	3	Zool 202	5
Zool 102	5	Zool 103	5	Zool 310	5
Secondary		Secondary		Secondary	
Concentration	<u>5</u>	Concentration	<u>5</u>	Concentration	<u>4</u>
	16		16		17

Fourth Year

GSA-3	3	GSA-3	3	Zool 382c	$\frac{1}{2}$
Zool 300	5	Zool 401	5	Electives	14
Zool 382a	$\frac{1}{2}$	Zool 382b	$\frac{1}{2}$	Concentration	4
Secondary		Secondary			
Concentration	5	Concentration	5		
Concentration	<u>4</u>	Concentration	<u>4</u>		
	17 $\frac{1}{2}$		17 $\frac{1}{2}$		18 $\frac{1}{2}$

¹Students with good high school background should waive GSA-1 and begin chemistry requirement.

²GSB 211a,b,c acceptable.

Zoology students are required to have three quarters in either botany or physics.

Physical Therapy
(Preprofessional)

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	13		13		14

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-1	3	GSC-1	3	GSC-1	3
GSE 201	3	Elective	3	USAF	0
USAF	1	USAF	1	GSA 302	3
Elective	<u>3</u>	Phsl 300	<u>4</u>	Psyc 307	<u>4</u>
	16		17		16

Third Year

Phsl 315a	5	Phsl 315b	5	Phsl 315c	5
GSC-2	3	GSC-2	3	GSC-2	3
GSB-3	3	GSB-3	3	Chem 111c	5
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Elective	<u>5</u>
	16		16		18

Fourth Year

GSA-3		GSC-3	3	Phys Ed	6
(Bioscience)	3				
GSC-3	3				

Students may apply to a professional school after two years. Two years will then be taken in the professional school. If the student applies after three years of college, he will attend the professional school for one year only. The undergraduate course should be especially heavy in anatomy, physiology, physical education, and psychology. Students seeking a bachelor's degree should consult the premedical adviser.

Predental (Preprofessional) College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Chem 111c	<u>5</u>
	15		15		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-2	3	GSB-2	3	GSB-2	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD FL	3	GSD FL	3	GSD FL	3
USAF	1	USAF	1	USAF	0
Chem 305a	<u>4</u>	Chem 305b	<u>4</u>	Chem 235	<u>5</u>
	17		17		17

Third Year

GSA-3		GSA-3		GSC-2	3
(bioscience) 3-5		(bioscience) 3-5		Bioscience	3-5
GSB-3	3	GSB-3	3	GSE 201	3
GSC-2	3	GSC-2	3	Phys 206b	5
Phys 206a	<u>5</u>	Phys 206c	<u>5</u>		
	16		16		16

Fourth Year

GSC-3	3	GSC-3	3
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The concentration should be completed in the fourth year. The student may elect any concentration in the College of Liberal Arts and Sciences.

The six courses listed above in chemistry constitute a secondary concentration for predental students.

The student should take the Dental Achievement Test in the Spring of his junior year, if he stays four years.

Total minimum required hours are 192, of which 64 must be on the 300 or 400 level.

Pre-Engineering (Preprofessional)¹

School of Technology

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB-1	3	GSD 101b	3	GSC-1	3
GSC-1	3	GSE PE	1	GSD 103	3
GSD 101a	3	USAF	0	GSE PE	1
GSE PE	1	FC 000	0	USAF	0
USAF	0	Chem 111b ³	5	USAF	1
FC 000	0	Math 150b	5	FC 000	0
Math 150a ²	5	Tech 101b	3	Chem 111c	5
Tech 101a	<u>3</u>			Math 252a	<u>5</u>
	18		17		17

Second Year

GSA-2	3	GSA-2	3	GSA-2	3
USAF	0	GSB-1	3	GSB-1	3
USAF	1	GSC-1	3	GSE 201	3
Engr 260a	3	USAF	0	USAF	0
Math 252b	4	USAF	1	Engr 260c	3
Phys 211a	5	Engr 260b	3	Phys 211c	5
		Phys 211b	<u>5</u>		
	<u>16</u>		18		<u>17</u>

¹Students pursuing the pre-engineering program should apply for admission to the engineering program in the School of Technology after completing 64 quarter hours of credit.

²Students may qualify for advanced standing in GSD 114a, 114b, 114c, and be permitted to enroll in Math 150a.

³Students who have not had chemistry in high school must take Chem 111a before registering for Chem 111b.

Effective as of the Summer Quarter, 1965.

prelaw (Preprofessional) College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 108a or FL	3	GSD 108b or FL	3	GSD 108c or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	16		16		17

Second Year

GSA 201a	3	GSA 201c	3	GSA 201b	3
GSB 201a or 211a ¹	3	GSB 201c or 211b	3	GSB 201b or 211c ¹	3
GSC-2	3	GSC-2	3	GSC-2	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
USAF	1	USAF	1	GSE 201	3
Govt 231 or Hist 201a ¹ 5 or 3		Govt 232 or Hist 201b ¹ 5 or 3		USAF	0
	<u>16-18</u>		<u>16-18</u>	Hist 210a or 201c ¹	<u>3</u>
					18

Third and Fourth Years

GSA-3	6	GSB-3	6	GSC-3	6
Acct 250 or 251a,b,c					

¹One who elects GSB 201a,b,c, should also elect Govt 231, 232, Hist 201a. One who elects GSB 211a,b,c, should also elect Hist 201a,b,c.

A pre-law student should have a concentration. The choice of concentration will determine what should be taken.

Premedical Technology
(Preprofessional)

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Chem 111c	<u>5</u>
	15		15		15

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-1	3	GSC-1	3	GSC-1	3
USAF	1	GSE 201	3	USAF	0
Chem 305a	4	USAF	1	Chem 235	5
Phs1 300	<u>4</u>	Chem 305b	<u>4</u>	Elective	<u>4</u>
	18		17		18

Third Year

GSB-3	3	GSB-3	3	GSC-2	3
GSC-2	3	GSC-2	3	Phys 206b	5
Phys 206a	5	Phys 206c	5	Phs1 315c	5
Phys 315a	<u>5</u>	Phs1 315b	<u>5</u>	Elective	<u>5</u>
	16		16		18

Fourth Year

GSA-3	3	GSA-3	3	Electives	
GSC-3	3	GSC-3	3		

Complete the concentration in the fourth year. Take courses in microbiology and biochemistry. Elect any concentration in the College of Liberal Arts and Sciences. The six courses listed above in chemistry constitute a secondary concentration. It may be converted to a concentration, if desired.

Total minimum hours required for graduation are 192, of which 64 must be on the 300 or 400 level.

Premedicine (Preprofessional) College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Chem 111c	<u>5</u>
	15		15		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD FL	3	GSD FL	3	GSD FL	3
USAF	1	USAF	1	USAF	0
Chem 305a	<u>4</u>	Chem 305b	<u>4</u>	Chem 235	<u>5</u>
	17		17		17

Third Year

GSC-2	3	GSC-2	3	GSB-3	3
GSE 201	3	Phys 206c	5	GSC-2	3
Phys 206a	5	Zool 202	5	Phys 206b	5
Zool 103	<u>5</u>	Elective	<u>3</u>	Zool 300	<u>5</u>
	16		16		16

Fourth Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB-3	3	GSC-3	3		

The concentration should be completed in the fourth year. The student may elect any concentration in the College of Liberal Arts and Sciences.

The six courses listed above in Chemistry constitute a secondary concentration.

The student should take the Medical Achievement Test in May of junior year, if he stays four years.

Total minimum required hours are 192, of which 64 must be on the 300 or 400 level.

Pre-occupational Therapy Course of Study For Men and Women

The following program is adapted particularly for admission to the University of Illinois Department of Occupational Therapy in Chicago. Students preparing for other professional colleges should read the respective catalogs and consult with the premedical advisor.

The course extends over a five-year period and the student is eligible for transfer to the University of Illinois professional curriculum at the beginning of the fourth academic year. The minimal grade average necessary for transfer is 3.5 and acceptance of the student is at the discretion of the University of Illinois. Students should be advised from their freshman year by the Southern Illinois University premedical advisor and also by Miss Beatrice Wade, Director of O.T., University of Illinois. The degree of B.S. in O.T. may be granted by the University of Illinois at the completion of the professional training in Chicago.

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSD 101a	3	GSD 101b	3	GSD 101c	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	1	GSE PE	1	GSE PE	1
Art 100a	<u>5</u>	Art 100b	<u>5</u>	Art 100c	<u>5</u>
	15		15		15

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 101a	3	GSB 101b	3	GSB 201b	3
GSB 201a	3	GSB 201c	3	HED 300	3
IEd 312a	3	IEd 303	4	Decorative	
C&T 127 ²	4	Phsl 200	3	process ¹	3
	<u> </u>		<u> </u>	Electives ³	<u>4-6</u>
	16		16		16-18

Third Year

Phsl 315a	5	Phsl 315b	5	Phsl 315c	5
Psyc 305	4	Psyc 307	4	PE 303	5
Art 385	4	Phsl 300	5	Electives	5-8
Elective	<u>3-4</u>	Art 302	<u>4</u>		<u> </u>
	16-17		18		15-18

Fourth Year

The student will transfer to the University of Illinois professional colleges in Chicago at the beginning of his fourth year. The degree will be conferred by that University.

¹Specific course not yet selected by the committee on curriculum.

²To be taken only if student has no prior training.

³See adviser at Southern Illinois University for recommended electives.

Prepharmacy
(Preprofessional)

College of Liberal Arts and Sciences

First or Preprofessional Year

Pharmacy is a five-year program. The first, or preprofessional year may be taken at Southern Illinois University. The applicant from SIU should have a minimal average of 3.5 and take no fewer than 45 hours of work in the College of Liberal Arts and Sciences.

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSC-1	3	GSC-1	3	GSC-1	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
Chem 111a	5	Chem 111b	5	Chem 111c	5
FC 000	0	FC 000	0	FC 000	0
USAF	<u>0</u>	USAF	<u>0</u>	USAF	<u>1</u>
	17		17		17

Applicants are generally advised against taking more than one year here, because advanced standing for more than one year will usually not be granted by a School of Pharmacy. There are some exceptions to this statement. The St. Louis College of Pharmacy requires two years of preprofessional work. Any applicant for that program should consult the premedical adviser and obtain the recommended two-year curriculum guide at SIU.

Additional summer training in the biological sciences is urged, and some pharmacy schools require it. Please consult the pre-medical adviser.

The American Association of Theological Schools regards the following as a minimum list of fields of study that a student should have before beginning study in a seminary. These suggestions should be useful to anyone planning a religious vocation, whatever his religious tradition. The work in these fields should be evaluated on the basis of his mastery of these fields rather than in terms of quarter hours. In order that this recommendation may help the student faced with the practical problem of selecting courses, however, it is suggested that he take approximately three-fourths of his college work in the following specific areas. (Courses offered at Southern Illinois University which should be particularly useful in supplying this background are in parentheses.) English literature, composition, speech, and related studies-- at least 24 quarter hours.

(English 309-310, 365, 390 and 391; Journalism 393; Speech 303; as well as several GSC and GSD courses, such as GSC 209, 345).

History, especially European and American--at least 12 quarter hours. (History 101-102-103, 311 and 416).

Philosophy, orientation in its history, content, and method-- at least 12 quarter hours. (GSC 102, 207-208, 310-311-312, 381-382-383, and Philosophy 301).

Natural Sciences, preferably physics, chemistry, and biology-- at least 9 quarter hours. (GSA 101-102-103, 200, 201-202-203).

Social Studies, including psychology, sociology, economics, government, anthropology, and education--at least 24 quarter hours. (GSB 101-102-103, 201-202-203, 211-212-213, 303; Psychology 305; Sociology 241, 320, 351, 380, 484; Education 355; and Anthropology 400 and 409).

Foreign Languages. One or more of the following: Latin, Greek, Hebrew, German, French--at least 18 quarter hours. (GSD, Elementary Greek, 130-131-132).

Religion. The pre-theology student may well seek counsel of the seminary of his choice in order to use the resources of his college most profitably. Attention is also called to religion courses offered for credit by the off-campus foundations and to the courses in philosophy of religion, sociology of religion, and world religion offered on campus.

Preveterinary
(Preprofessional)

College of Liberal Arts and Sciences

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Chem 111c	<u>5</u>
	15		15		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201c	3	GSB 201b	3
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD FL	3	GSD FL	3	GSD FL	3
USAF	1	USAF	1	USAF	0
Chem 305a	<u>4</u>	Chem 305b	<u>4</u>	Chem 235	<u>5</u>
	17		17		17

Third Year

GSA-3	3	GSA-3	3	GSC-2	3
GSB-3	3	GSC-2	3	GSE 201	3
GSC-2	3	Phys 206c	5	Phys 206b	5
Phys 206a	5	Electives	6	Electives	6
Electives	<u>3</u>				
	17		17		17

Fourth Year

GSC-3	3	GSC-3	3	GSB-3	3
Electives		Electives		Electives	

Complete the concentration in the fourth year. The student may elect any concentration in the College of Liberal Arts and Sciences.

The six courses listed above in Chemistry constitute a secondary concentration.

Total minimum required hours are 192, of which 64 must be on the 300 or 400 level.

Preveterinary (Professional)
(Two-Year Program)

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSA 201a	3	GSA 201b	3	GSA 201c	3
GSC 100 or 101	3	GSC 102	3	GSC 103	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	FC	0
FC	0	FC	0	USAF	1
USAF	0	USAF	0	Chem 111c	5
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>		
	18		18		18

Second Year

GSB 101b or 211a	3	GSB 101c or 211b	3	GSB 101a or 211c	3
GSD FL	3	GSD FL	3	GSD FL	3
USAF	1	USAF	1	GSE PE	1
Chem 305a	4	Chem 305b	4	USAF	0
Phys 206a	5	Phys 206b	5	Chem 235	5
	<u>16</u>		<u>16</u>	Phys 206c	<u>5</u>
					17

Missing: GSB-1 or -2 sequence, GSC-2 sequence, and GSE 201.

Preveterinary (Preprofessional)
(Three-year Program)

School of Agriculture

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1 (waive)	0	GSA-1 (waive)	0	GSA-1 (waive)	0
GSB 101b	3	GSB 101c	3	GSB 101a	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a	3	GSD 114b	3	GSD 114c	3
GSE PE	1	GSE PE	1	GSE PE	1
FC 000	0	FC 000	0	FC 000	0
USAF	0	USAF	0	USAF	1
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>	Chem 111c	<u>5</u>
	15		15		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC 101a	3	GSC 101b	3	GSC 101c	3
GSD FL	3	GSD FL	3	GSD FL	3
USAF	1	USAF	1	USAF	0
Chem 305a	<u>4</u>	Chem 305b	<u>4</u>	Chem 235	<u>5</u>
	17		17		17

Third Year

Phys 206a	5	Phys 206b	5	Phys 206c	5
GSA-3	3	GSA-3	3	GSE 201	3
GSC-2	3	GSC-2	3	GSC-2	3
GSB-3	3	Electives	6	Electives	6
Elective	<u>3</u>		<u>17</u>		<u>17</u>
	17		17		17

Fourth Year

GSC-3	3	GSC-3	3	Electives
Electives		Electives		

Suggested Agriculture electives (4 hours each): AgI 114; AnI 105, 125, 231, 315, 332.

A concentration may be completed in the fourth year by choosing the science option (48 hours in Agriculture of which 36 hours will be in the department of his choice).

Total minimum required hours are 192, of which 64 must be from the 300 or 400 level.

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 151	3	GSC 152	3	GSC 100 or 101	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
Elective	<u>3</u>	Elective	<u>3</u>	Elective	<u>3</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b or		GSA 201c or	
GSB 201a or		200	3	200	3
211a	3	GSB 201b or		GSB 201c or	
GSC 251a	3	211b	3	211c	3
GSD Math or FL	3	GSC 251b or		GSC 251b, 251c,	
GSE 201	3	251c	3	203, or 255	3
		GSD Math or FL	3	GSD Math or FL	3
		Elective	<u>3</u>	Elective	<u>3</u>
	<u>15</u>		15		15

Third and Fourth Years

Select concentration by middle of second year and complete requirements of the particular concentration selected.

Complete 6 hours of 300-level GS courses in each of the Areas A, B, and C.

Accounting

Business Division

(For students who matriculated in or subsequent to September, 1962)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 100 or 101	3	GSB 211a	3	GSB 211b	3
GSD 101a	3	GSC 152	3	GSC 151	3
GSD 114a ¹	3	GSD 101b	3	GSD 114d	3
GSE PE	1	GSD 114b	3	GSE PE	1
Mgt 170	<u>4</u>	GSE PE	<u>1</u>	Econ 210	<u>5</u>
	17		16		18

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSB 211c	3	GSC 251b	3	GSB 311	3
GSC 251a	3	GSE 201	3	GSC 251c	3
GSD 103	3	Acct 251b	4	Acct 251c	4
Acct 251a	<u>4</u>	Mgt 271	<u>4</u>	Mktg 230	<u>5</u>
	16		17		18

Third Year

GSA-3	3	GSA-3	3	GSC-3	3
GSB 312 or 356	3	GSC-3	3	Acct 453a	4
Acct 351a	4	Acct 341	4	Acct 442	4
Mgt 371	4	Acct 351b	4	Mgt 372 or 373	4
	<u>14</u>	Mgt 340	<u>4</u>		<u>15</u>
			18		

Fourth Year

Acct 331	4	Acct 355-4,		Acct 356	4
Acct 453b	4	432-4, 458-4,		Electives	10
Mgt 320	5	or 461-4	3-4		
		Econ 315	4		
	<u>13</u>	Electives	<u>8</u>		<u>14</u>
			16		

The student should consult his adviser in the selection of those third-level General Studies courses where no specific course is shown.

¹One who does not qualify for this course should take Math 100-0.

Art

Fine Arts Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a or 103	3	GSD 101b, 103, or 101a	3	GSD 103 or 151b	3
GSE PE	1	GSE PE	1	GSE 201	3
Art 100	<u>5</u>	Art 100	<u>5</u>	Art 100	<u>5</u>
	15		15		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b, 203, or 255 or 251c	3	GSC 251c, 203, or 255 or 251b	3
Art 201	4	Art 201	4	Art 324, 310, 305, 358 (any 2)	<u>8</u>
Art 203	4	Elective	4		17
PE	1				
	<u>18</u>		<u>17</u>		

Third Year

GSA-3	3	GSA-3	3	GSC 351c	4
GSC 351a	4	GSC 351b	4	GSD FL	3
GSD FL	3	GSD FL	3	Art	4
Art	4	Art	4	Elective	4
Art	<u>4</u>	Art	<u>4</u>		
	18		18		15

Fourth Year

GSB-3	3	GSB-3	3	Electives	12
Electives	<u>12</u>	Electives	<u>12</u>		
	15		15		12

Art Education

Education or Fine Arts Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a or 103	3	GSD 101b, 103, or 101a	3	GSD 103 or 101b	3
GSE PE	1	GSE PE	1	GSE 201	3
Art 100	<u>5</u>	Art 100	<u>5</u>	Art 100	<u>5</u>
	15		15		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201 or 211c	3
GSC 251a	3	GSC 251b, 203, 255, or 251c	3	GSC 251c, 203, 255, or 251b	3
Art 201	4	Art 201	4	Art 324, 310, 300, 305, 358 (any 2)	<u>8</u>
Art 203	4	Art 203	4		17
GSE PE	1				
	<u>18</u>		<u>17</u>		

Third Year

GSA-3	3	GSA-3	3	GSB 331	3
GSC 351a	4	GSC 351b	4	GSC 351c	4
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
Art	4	Art	4	Art	4
Art	<u>4</u>	Art 365	<u>4</u>	Guid 305	<u>4</u>
	18		18		18

Fourth Year

GSB-3	3	IM 417	4	Electives	12
EdAd 355	4	EdS 352	8		
Guid 422	4	Electives	4		
Art	<u>4</u>		<u>16</u>		<u>12</u>
	15				

Biology (With Chemistry)

Science and Technology Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 201c	3
GSA 201a	3	GSA 201b	3	GSB 101c	3
GSB 101a	3	GSB 101b	3	GSD 103	3
GSD 101a	3	GSD 101b	3	GSE PE	1
GSE PE	1	GSE PE	1	Chem 111c	5
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>		
	18		18		15

Second Year

GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 151	3	GSC 152	3	GSC 101	3
GSD FL	3	GSD FL	3	GSD FL	3
Chem 235	5	GSD Math	3	GSD Math	3
Bot 202	<u>5</u>	Bot 311	<u>5</u>	Zool 102	<u>5</u>
	19		17		17

Third Year

GSC 251a	3	GSA 358a	3	GSA 358b	3
GSD Math	3	GSB-3	3	GSB-3	3
Zool 103	5	GSC 251b or 251c	3	GSC 251c, 251b, 203, or 255	3
Chem 305a	5	Zool 310	5	GSE 201	3
	<u>5</u>	Chem 305b	<u>5</u>	Zool 401	<u>5</u>
	16		19		17

Fourth Year

GSC-3	3	GSC-3	3	Electives	15
Phsl (305, 320, or 359)	5	Electives	12		
Electives	<u>7</u>		<u>15</u>		<u>15</u>
	15				

Botany (with Chemistry)

Science and Technology Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 201b	3
GSA 201a	3	GSA 201c	3	GSB 101c	3
GSB 101a	3	GSB 101b	3	GSD 101c	3
GSD 101a	3	GSD 101b	3	GSE PE	1
GSE PE	1	GSE PE	1	Chem 111c	5
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>		
	18		18		15

Second Year

GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 151	3	GSC 152	3	GSC 101	3
GSD FL	3	GSD FL	3	GSD FL	3
Bot 202	5	GSD Math	3	GSD Math	3
Chem 235	<u>5</u>	Bot 203	<u>5</u>	Bot 310	<u>5</u>
	19		17		17

Third Year

GSC 251a	3	GSA 358a	3	GSA 358b	3
GSD Math	3	GSC 251b or 251c	3	GSC 251c or 251b or 203	
Bot 320	5	Bot 311	5	or 255	3
Chem 305	5	Chem 305	5	GSE 201	3
	<u>16</u>		<u>16</u>	Electives	<u>7</u>
					16

Fourth Year

GSB-3	3	GSB-3	3	Electives	15
GSC-3	3	GSC-3	3		
Electives	<u>9</u>	Electives	<u>9</u>		
	15		15		15

Business Education
(Business-Teacher Education)

Business Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 100 or 101	3	GSB 211a	3	GSB 211b	3
GSD 101a	3	GSC 152	3	GSC 151	3
GSD 114a ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 114b	3	GSD 114d	3
Mgt 170 ²	<u>4</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSB 201c	3	GSB 311	3	GSC 251c	3
GSB 211c	3	GSC 251b	3	GSE 201	3
GSC 251a	3	Acct 251b	4	Acct 251c	4
Acct 251a	<u>4</u>	Mgt 271	<u>4</u>	BsEd 327	<u>4</u>
	16		17		17

Third Year

GSA-3	3	GSA-3	3	GSB 331	3
GSC-3	3	GSC-3	3	BsEd 341	4
BsEd 241	2	BsEd 304 ²	3	Econ 210	5
BsEd 324a ³	4	BsEd 324b ³	3	EdS 315	4
Guid 305	<u>4</u>	Mgt 340	<u>4</u>		
	16		17		16

Fourth Year

BsEd 351	4	BsEd 405	4	BsEd 404	3
BsEd 403	3	BsEd 407	4	EdS 352	12
Mgt 371	4	BsEd 427	3	Guid 422	4
Mktg 230	5	EdAd 355	4		
	<u></u>	IM 417	<u>4</u>		
	16		19		19

The student should consult his adviser in the selection of those third level General Studies courses where no specific course is shown.

¹One who does not qualify for this course should take Math 100-0.

²Students who do not demonstrate adequate competency to enroll in BsEd 304, Typewriting IV, should take BsEd 201-9 during the second year. (See the Undergraduate Catalog for competency requirements.)

³Students who do not demonstrate adequate competency to enroll in BsEd 324a should take BsEd 221-12 during the second year.

Business Education
(Secretarial Studies and Office Management)

Business Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 211a	3	GSB 211b	3	GSB 211c	3
GSC 100 or 101	3	GSC 152	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 114a ¹	3	GSD 114b	3	GSD 114d	3
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSC 251a	3	GSB 311	3	GSC 251c	3
Acct 251a	4	GSC 251b	3	GSE 201	3
BsEd 221a	4	Acct 251b	4	Acct 251c	4
Mgt 271	<u>4</u>	BsEd 221b	<u>4</u>	BsEd 221c	<u>4</u>
	18		17		17

Third Year

GSA-3	3	GSA-3	3	GSB 312 or 356	3
GSC-3	3	GSC-3	3	Econ 210	5
BsEd 241	2	BsEd 304	3	BsEd 327	4
BsEd 324a	4	BsEd 324b	4	Mgt 240	4
BsEd 341	<u>4</u>	Mgt 320	<u>4</u>		
	16		17		16

Fourth Year

Mgt 340	4	BsEd 427	4	BsEd 428	4
Mgt 371	4	BsEd 407	4	Mgt 361	4
Mktg 230	5	Econ 315	4	Mgt 385	4
Elective	<u>4</u>	Elective	<u>2</u>		
	17		14		12

The student should consult his adviser in the selection of those third-level General Studies courses where no specific course is shown.

¹One who does not qualify for this course should take Math 100-0.

Chemistry (With Mathematics)

Science and Technology Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
Chem 111a	5	Chem 111b	5	Chem 111c	5
Math 111a	<u>5</u>	Math 111b	<u>5</u>	Math 150a	<u>4</u>
	17		17		17

Second Year

GSC 151	3	GSC 152	3	GSC 101	3
Chem 235	5	Chem 336	4	Chem 311	3
Math 150b	4	Math 252a	4	Math 252b	4
Phys 211a	5	Phys 211b	5	Math 305	3
	<u>17</u>		<u>16</u>	Phys 211c	<u>5</u>
					18

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSC 251a	3	GSC 251b or		GSC 251c or	
GSD 126a	3	251c	3	251b or 203	
Chem 341a	5	GSD 126b	3	or 255	3
Phys 300	5	GSE 201	3	GSD 126c	3
		Chem 341b	5	Electives ¹	3
	<u>19</u>		<u>17</u>	Chem 341c	<u>5</u>
					17

Fourth Year

GSA-3	3	GSA-3	3	GSB 201c or	
GSB 201a or		GSB 201b or		211c	3
211a	3	211b	3	Electives	7
GSB-3	3	GSB-3	3	Chem 461c	4
GSC-3	3	GSC-3	3	Chem 375	1
Chem 461a	4	Chem 461b	4		
Chem 375	<u>1</u>	Chem 375	<u>1</u>		
	17		17		15

¹10 hours of electives should be chosen from Chem 396, 411, 412, 432, 433, 464, or 490 to qualify as a professional chemist.

Early Childhood Education

Education Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 100 or 101	3	GSD 101b	3	GSD 103	3
GSD 101a	3	GSD 112b	3	GSD 112c	3
GSD 112a	3	GSE PE	1	GSE PE	1
GSE PE	1	Mus 040 (or proficiency)	1	Mus 040 (or proficiency)	1
		Elective	<u>2</u>	Elective	<u>2</u>
	<u>16</u>		<u>16</u>		<u>16</u>

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
GSE 201	3	GSB 331	3	Govt 210	4
Mus 040 (or proficiency)	1	Elective	4	EdEl 203	3
GSB-3	<u>3</u>				
	<u>16</u>		<u>16</u>		<u>16</u>

Third Year

Guid 305	4	SpEd 428	4	Math 210	4
Art 300	4	EdEl 316	4	EdEl 337	4
PEW 350	4	GSC-3 (Lang		GSC-3	3
EdAd 355	4	Arts)	3	Art 300	4
		Mus 200	3		
		Eng 391	<u>3</u>		
	<u>16</u>		<u>17</u>		<u>15</u>

Fourth Year

IM 417	4	GSA-3 (Nat		Student	
GSA-3 (Nat		Sci)	3	Teaching	4
Sci)	3	Hist 201	4	EdEl 313	4
Mus 300	3	Student		Ed elective	9
Elective	<u>6</u>	Teaching	<u>8</u>		
	<u>16</u>		<u>15</u>		<u>17</u>

Economics

Business Division

(For students who matriculated in or subsequent to September, 1962)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 100 or 101	3	GSB 211a	3	GSB 211b	3
GSD 101a	3	GSC 152	3	GSC 151	3
GSD 114a ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 114b	3	GSD 114d	3
Mgt 170 ²	<u>4</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSB 211c	3	GSB 312	3	GSC 251c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Acct 251a	4	Acct 251b	4	Acct 251c	4
Econ 210	<u>5</u>	Econ 308	<u>4</u>	Mktg 230	<u>5</u>
	18		17		18

Third Year

GSA-3	3	GSA-3	3	Econ 441	4
GSB-356	3	GSC-3	3	Electives ³	4
GSC-3	3	Econ 440	4	Electives ³	4
Econ 315	4	Mgt 320	5	Mgt 340	4
Mgt 371	<u>4</u>				
	17		15		16

Fourth Year

Econ 470 or		Econ 473	4	Electives ³	4
GSB 311	3	Electives ³	4	Electives	10
Mgt 479 or 481	4	Electives ³	4		
Electives	<u>6</u>	Electives	<u>3</u>		
	13		15		14

¹One who does not qualify for this course should take Math 100-0.²The student concentrating in economics is not required to take Mgt 170-4. He should consult with an economics faculty adviser as to whether he should take this course.³Economics electives and general electives should be selected in consultation with Economics faculty advisers.

The student should consult his adviser in the selection of those third-level General Studies courses where no specific course is shown.

Elementary Education

Education Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 100	3	GSC 101	3	GSE 201	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD 112a	3	GSD 112b	3	GSD 112c	3
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
Electives	7	GSB 331	3	Govt 210	4
	<u>16</u>	Electives	<u>4</u>	EdEl 203	<u>3</u>
			16		16

Third Year

Guid 305	4	Ed elective	4	Math 210	4
Art 300	4	EdEl 314	4	EdEl 337	4
PEW 350	4	GSC-3 (Lit)	3	Art 300	4
EdAd 355	4	Mus 200	3	GSC-3	3
	<u>16</u>	Eng 391	<u>3</u>		<u>15</u>
			17		

Fourth Year

IM 417	4	GSA-3 (Nat		Student	
GSA-3 (Nat		Sci) elective	4	Teaching	8
Sci) elective	3	Hist 201	4	Ed elective	6
Mus 300	3	EdEl 313	4	Electives	2
GSB-3	<u>6</u>	Ed elective	<u>4</u>		<u>16</u>
	16		16		

Engineering and Technology

Science and Technology Division

Common first six quarters are to be followed for concentrations in Engineering Administration, Engineering Biology, Engineering Mathematics, Engineering Physics, or Engineering Technology.

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA-1a (waive)	0	GSA-1b (waive)	0	GSA-1c (waive)	0
GSD-1a	3	GSD-1b	3	GSD-1c	3
GSE 201	3	GSE PE	1	GSE PE	1
Math 150a ¹	4	Math 150b	4	Phys 211a	5
Chem 111b	5	Chem 111c	5	Chem 235	5
ApS 101a	3	Engr Prob	1	Math 252a	4
		Math 225	<u>4</u>		
	<u>18</u>		<u>18</u>		<u>18</u>

Second Year

GSA-2a	3	GSA-2b	3	GSA-2c	3
GSB-1a	3	GSB-1b	3	GSB-1c	3
Engr 260a	3	Engr 260b	3	Engr 260c	3
Math 252b	4	Math 305a	4	Math 305b	4
Phys 211b	<u>5</u>	Phys 211c	<u>5</u>	Phys 300	<u>5</u>
	<u>18</u>		<u>18</u>		<u>18</u>

¹Students entering Math 150a will receive advanced standing in GSD Math.

English

Humanities Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 100 or 101	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL & conversation	4	GSD FL & conversation	4	GSD FL & conversation	4
GSD 112a (optional)	(3)	GSD 112b (optional)	(3)	GSD 112c (optional)	(3)
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		17		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
GSE 201	3	Elective	3	Elective	3
FL 201a and 220	<u>5</u>	FL 201b and 220	<u>5</u>	FL 201c and 220	<u>5</u>
	17		17		17

Third Year

Eng 302a	4	Eng 302b	4	Eng 302c	4
Eng 300	4	Eng 309a	4	Eng 309b	4
GSA-3	3	GSA-3	3	Electives	9
GSB-3	3	GSB-3	3		
GSC-3	<u>3</u>	GSC-3	<u>3</u>		
	17		17		17

Fourth Year

Eng 365	4	Eng 499	2	Eng electives	8
Eng electives	4	Eng electives	4	Electives	9
Electives	<u>9</u>	Electives	<u>11</u>		
	17		17		17

Foreign Languages

Humanities Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 100 or 101	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
GSD 123a, 126a, 136a, or 140a ¹	3	GSD 123b, 126b, 136b, or 140b ¹	3	GSD 123c, 126c, 136c, or 140c ¹	3
Fr 123a, Ger 126a, Russ 136a, or Span 140a ²	1	Fr 123b, Ger 126b, Russ 136b, or Span 140b ²	<u>1</u>	Fr 123c, Ger 126c, Russ 136c, or Span 140c ²	<u>1</u>
	17		17		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
GSE 201	3	Elective	3	Elective	3
Fr, Ger, Russ, or Span 201a ³	3	Fr, Ger, Russ, or Span 201b ³	3	Fr, Ger, Russ, or Span 201c ³	3
Fr, Ger, Russ, or Span 220	<u>2</u>	Fr, Ger, Russ, or Span 220	<u>2</u>	Fr, Ger, Russ, or Span 220	<u>2</u>
	17		17		17

Third Year

GSA-3	3	GSA-3	3	Eng-3	3
GSB-3	3	GSB-3	3	Hist-3 (related to concentra- tion	3
GSC-3	3-4	GSC-3	3-4	FL-3 ⁴ (Fr, Span, Ger)	3-4
FL-3 ⁴ (Fr, Span, Ger)	3-4	FL-3 ⁴ (Fr, Span, Ger)	3-4	Secondary concentration or elective	3-4
	<u>15-17</u>		<u>15-17</u>		<u>15-17</u>

Fourth Year

FL-3 or FL-4 ⁵	3-5	FL-3 or FL-4 ⁵	3-5	FL-3 or FL-4 ⁵	3-5
Secondary concentration and elec- tives	<u>10-12</u>	Secondary concentration and elec- tives	<u>10-12</u>	Secondary concentration and elec- tives	<u>10-12</u>
	15-17		15-17		15-17

¹One who has completed more than one year of French, Spanish, German, or Russian in high school should consult with FL faculty before registering for a course in the same language.

²The conversation courses can be taken only by concurrent registration in the corresponding beginning courses.

³One who has completed 201-9 (or the equivalent) in French, Spanish, or German should substitute 311 in the same language.

⁴If fewer than 15 hours toward the concentration have been completed by the beginning of the third year, additional FL courses should be taken to insure a minimum of 29 hours toward the concentration by the end of the third year.

⁵If fewer than 29 hours toward the concentration have been completed by the beginning of the fourth year, additional FL courses should be taken to insure a minimum of 42 hours in the language of concentration.

Geography

Education or Social Sciences Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 100 or 101	3	GSC 151	3	GSC 152	3
GSD 112a or 114a ¹	3	GSD 112b or 114b	3	GSD 112c or 114c ²	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c or 200	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
GSD FL ³	3	GSD FL	3	GSD FL	3
Elective	4	GSE 201	3	Geog 302	<u>4</u>
	16		15		16

Third Year

GSA 330	3	GSA 331	3	GSA-3	3
GSB 354 or GSB-3	3	GSB-3	3	Geog 308	3
GSC-3	3	GSC-3	3	Geog 310a	3
Geog 304	4	Geog 306	4	Elective	4
Elective	<u>4</u>	Elective	4	Elective	4
	17		17		17

Fourth Year

Meet requirements in geography concentration, secondary concentration, and other degree requirements.

¹Cartography students must take GSD 114-9, also Geog 310a sometime in second year.

²GSD 114d-3 is recommended in spring quarter for non-cartography concentrations.

³Foreign language not required for B.S. in Ed. degree.

Government

Social Sciences Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 101 or 100	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b or 251c	3	GSC 251c or 251b or	
Govt 210	4	Govt 232 ¹	4	203 or 255	3
GSE 201	3	Elective	3-4	Govt (300 Level)	4-5
	<u>16</u>		<u>16-17</u>	Elective	<u>3-4</u>
					17-18

Third Year

GSA-3	3	GSA-3	3	Govt	8
GSB-3	3	GSB-3	3	Secondary	
GSC-3	3	GSC-3	3	concentration,	
Govt	4	Govt	4	electives	8
Secondary		Secondary			
concentration,		concentration,			
electives	<u>3-4</u>	electives	<u>3-4</u>		
	16-17		16-17		<u>16</u>

Fourth Year

Govt	8	Govt	9	Electives	16
Secondary		Secondary			
concentration,		concentration,			
electives	<u>8</u>	electives	<u>7</u>		
	16		16		<u>16</u>

¹Counts toward a concentration or secondary concentration but not required.

History

Social Sciences Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 100 or 101	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b or 251c	3	GSC 251c, 251b, 203, or 255	3
Hist 100	3	Elective	4	Elective	4
Phil 200	4	GSE 201	<u>3</u>	Elective	<u>3-4</u>
	16		16		16-17

Third Year

GSA-3	3	GSA-3	3	GSB 300c	3
GSB 300a	3	GSB 300b	3	Hist electives	6
GSC-3	3	GSC-3	3	Secondary	
Hist elective	3-4	Hist elective	3-4	concentration	4
Secondary		Secondary		Electives	4
concentration	<u>4</u>	concentration	<u>4</u>		
	16-17		16-17		17

Fourth Year

Hist 452	3	Hist elective	4	Hist elective	4
Hist elective	3	Secondary		Secondary	
Electives	6	concentration	4	concentration	4
Secondary		Electives	8	Electives	8
concentration	<u>4</u>				
	16		16		16

Management (Finance) Business Division
 (For students who matriculated in or subsequent to September, 1962)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 100 or 101	3	GSB 211a	3	GSB 211b	3
GSD 101a	3	GSC 152	3	GSC 151	3
GSD 114a ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 114b	3	GSD 114d	3
Mgt 170	<u>4</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSB 211c	3	GSB 311	3	GSC 251c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Acct 251a	4	Acct 251b	4	Acct 251c	4
Econ 210	<u>5</u>	Mgt 271	<u>4</u>	Mktg 230	<u>5</u>
	18		17		18

Third Year

GSA-3	3	GSA-3	3	Mgt 320	5
GSB 356	3	GSC-3	3	Mgt 327	4
GSC-3	3	Mgt 361	3	Mgt 385	4
Mgt 340	4	Mgt 372 or 373	4	Econ 315	4
Mgt 371	<u>4</u>	Econ 310	<u>4</u>		
	17		17		17

Fourth Year

Mgt 323	4	Mgt 421	4	Mgt 475	4
Mgt 328	3	Electives	8	Electives	8
Mktg 334, 341, or 438	4				
Electives	<u>4</u>				
	15		12		12

¹One who does not qualify for this course should take Math 100-0.

The student should consult his adviser in the selection of those third-level General Studies courses where no specific course is shown.

Management (General Business) Business Division
 (For students who matriculated in or subsequent to September, 1962)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 100 or 101	3	GSB 211a	3	GSB 211b	3
GSD 101a	3	GSC 152	3	GSC 151	3
GSD 114a ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 114b	3	GSD 114d	3
Mgt 170	<u>4</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSB 211c	3	GSB 311	3	GSC 251c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Acct 251a	4	Acct 251b	4	Acct 251c	4
Econ 210	<u>5</u>	Mgt 271	<u>4</u>	Mktg 230	<u>5</u>
	18		17		18

Third Year

GSA-3	3	GSA-3	3	Mgt 320	5
GSB 356	3	GSC-3	3	Mgt 327	4
GSC-3	3	Mgt 361	3	Mgt 385	4
Mgt 340	4	Mgt 372 or 373	4	Econ 315	4
Mgt 371	<u>4</u>	Econ 310	<u>4</u>		<u>17</u>
	17		17		

Fourth Year

Mgt 380	4	Mgt 421	4	Mgt 479	4
Mktg 334, 341, or 438	4	Mgt 473	4	Electives	7
Electives	<u>8</u>	Electives	4		
	16		12		11

The student should consult his adviser in those third level General Studies courses where no specific course is shown.

¹One who does not qualify for this course should take Math 100-0.

Management (Personnel)

Business Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 100 or 101	3	GSB 211a	3	GSB 211b	3
GSD 101a	3	GSC 152	3	GSC 151	3
GSD 114a ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 114b	3	GSD 114d	3
Mgt 170	<u>4</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSB 211c	3	GSB 311	3	GSC 251c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Acct 251a	4	Acct 251b	4	Acct 251c	4
Econ 210	<u>5</u>	Mgt 271	<u>4</u>	Mktg 230	<u>5</u>
	18		17		18

Third Year

GSA-3	3	GSA-3	3	Mgt 320	5
GSB 201c	3	GSB 356	3	Mgt 380	4
GSC-3	3	GSC-3	3	Mgt 385	4
Mgt 340	4	Mgt 361	3	Econ 310	4
Mgt 371	<u>4</u>	Mgt 372 or 373	<u>4</u>		
	17		16		17

Fourth Year

Mgt 382 or		Mgt 480	4	Mgt 481	4
Econ 411	3-4	Mgt 485	4	Electives	8
Econ 315	4	Electives	4		
Electives	<u>9-8</u>				
	16		12		12

¹One who does not qualify for this course should take Math 100-0.

The student should consult his adviser in the selection of those third level GS courses where no specific courses shown.

Marketing Business Division
 (For students who matriculated in or subsequent to September, 1962)

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSC 100 or 101	3	GSB 211a	3	GSB 211b	3
GSD 101a	3	GSC 152	3	GSC 151	3
GSD 114a ¹	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSD 114b	3	GSD 114d	3
Mgt 170	<u>4</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 200	3
GSB 211c	3	GSB 311	3	GSC 251c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Acct 251a	4	Acct 251b	4	Acct 251c	4
Econ 210	<u>5</u>	Mgt 361	<u>3</u>	Mktg 230	<u>5</u>
	18		16		18

Third Year

GSA-3	3	GSA-3	3	Mktg ²	3-4
GSB 312	3	GSC-3	3	Mktg ³	3-4
GSC-3	3	Mktg ²	3-4	Mgt 320	5
Mktg ²	3-4	Mktg ³	3-4	Mgt 373	4
Mgt 371	<u>4</u>	Mgt 340	<u>4</u>		
	16-17		16-18		15-17

Fourth Year

Mktg ³	3-4	Mktg 438 or		Mktg 490	4
Econ 315	4	463	3-4	Electives	10-7
Electives	8	Mktg 444	4		
	<u></u>	Electives	<u>4</u>		
	15-16		11-12		14-11

Student should consult his adviser in the selection of those third level GS courses where no specific course is shown.

¹One who does not qualify for this course should take Math 100-0.

²Any one of the following courses: Mktg 331, 335, 338, 339, 349.

³Any one of the following courses: Mktg 333, 334, 336, 337, 341.

Mathematics
(With Physics)

Education or Science and Technology Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
Math 150a ¹	4	Math 150b	4	Math 252a	4
Chem 111a ²	<u>5</u>	Chem 111b ²	<u>4</u>	Chem 111c ²	<u>5</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or		GSB 201b or		GSB 201c or	
211a	3	211b	3	211c	3
GSC 151	3	GSC 152	3	GSC 101	3
Math 252b	4	Math 300	4	Math 320a	3
Phys 211a	<u>5</u>	Phys 211b	<u>5</u>	Phys 211c	<u>5</u>
	18		18		17

Third Year

GSA-3	3	GSA-3	3	GSC 251c or	
GSC 251a	3	GSC 251b or		251b or 203	
GSD FL	3	251c	3	or 255	3
Math 320b	3	GSD FL	3	GSD FL	3
Phys 300	5	Math ³	3	GSE 201	3
		Phys electives	4	Math ³	3
	<u>17</u>		<u>16</u>	Phys electives	<u>4</u>
					16

Fourth Year

GSB-3	3	GSB-3	3	Math electives	8
GSC-3	3	GSC-3	3	Electives	8
Math electives	4	Math electives	4		
Electives	<u>7</u>	Electives	<u>7</u>		
	17		17		<u>16</u>

¹A student who needs Math 111a,b, to start Math 150a, will have fewer electives.

²Recommended electives.

³One of the sequences 452a,b or 480a,b or a geometry sequence of 2 courses above 299 must be completed.

Music

Fine Arts Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
Mus 105a ¹	4	Mus 105b ¹	4	Mus 105c ¹	4
Mus (applied)	2	Mus (applied)	2	Mus (applied)	2
Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>
	17		17		17

Second Year

GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Mus 205a ¹	3	Mus 205b ¹	3	Mus 205c ¹	3
Mus (applied)	2	Mus (applied)	2	Mus (applied)	2
Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>
	15		15		15

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB-3	3	GSB-3	3	GSC 357c	3
GSA 361	3	GSA-3	3	Mus (elective)	1
GSC 357a	3	GSC 357b	3	Elective	3
Mus (elective) 1-3		Mus (elective) 1-3		Elective	3
Elective	<u>2-3</u>	Elective	<u>2-3</u>		
	15-18		15-18		13-14

Fourth Year

(Secondary Concentration Requirements 24-27 hours)

Electives	16	Electives	16	Electives	16
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¹Private or class piano may be required in conjunction with Mus 105 and 205.

The student is expected to proficiency GSC 255 to complete 9 hours in GSC-2.

Music Education

Fine Arts Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSD Math or FL ¹	3	GSD Math or FL ¹	3	GSD Math or FL ¹	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
Mus 105a	4	Mus 105b	4	Mus 105c	4
Mus (applied)	2	Mus (applied)	2	Mus (applied)	2
Mus (ensemble)	1	Mus (ensemble)	1	Mus (ensemble)	1
Mus (class		Mus (class		Mus (class	
piano) ²	1	piano) ²	1	piano) ²	1
Mus (class inst)	<u>1</u>	Mus (class inst)	<u>1</u>	Mus (class inst)	<u>1</u>
	16		16		16

Second Year

GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Mus 205a	3	Mus 205b	3	Mus 205c	3
Mus (applied)	2	Mus (applied)	2	Mus (applied)	2
Mus (class		Mus (class		Mus (class	
piano) ²	1	piano)	1	piano)	1
Mus (class inst)	1	Mus (class inst)	1	Mus (class inst)	1
Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>
	20		20		20

Third Year

GSA 201a ³	3	GSA 201b ³	3	GSA 201c ³	3
GSB 331	3	GSB-3	3	Mus 326a	3
GSC 357a	3	GSC 357b	3	GSC 357c	3
Mus 301a	3	Mus 301b	3	Mus 301c	3
Mus 318a	3	Mus 318b	3	Mus 309a	3
Mus (applied)	2	Mus (applied)	2	Mus (applied)	2
Mus (ensemble)	1	Mus (ensemble)	1	Mus (ensemble)	1
Mus (class		Mus (class		Mus (class	
voice) ⁴	<u>1</u>	voice) ⁴	<u>1</u>	voice) ⁴	<u>1</u>
	19		19		19

Fourth Year

GSA 361	3	GSA-3	3	SEd 352d ⁵	8
Guid 305	4	EdEl 351e ⁵	4	Mus (applied)	2
Mus (applied)	2	Mus (applied)	2	Mus (ensemble)	1
Mus (ensemble)	1	Mus (ensemble)	1	Mus (class inst)	1
Mus (class		Mus (class			
inst)	1-2	inst)	1-2		
Mus 309b	<u>2</u>	Mus (elective)	<u>2</u>		
	13-14		13-14		12

REQUIRED: 2 quarters of class strings, 2 quarters of class woodwinds, 2 quarters of class brass, and 1 quarter of class percussion.

¹A music student who has successfully completed two years of high school foreign language is not required to take GSD mathematics or foreign language.

²6 quarters of class piano, or proficiency, are required--use as elective hours if proficiency passed.

³Substitute GSA 200-3 for any one (GSA 201b,c).

⁴Three quarters required for all except voice majors.

⁵Student may choose ElEd 351e-8 for spring quarter and/or Sec Ed 352d-4 for winter quarter--or 12 quarter hours in either, according to his interest field. Consult with adviser.

The student is expected to proficiency GSC 255 to complete 9 hours in GSC-2.

Music Performance

Fine Arts Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math or FL	3	GSD Math or FL	3	GSD Math or FL	3
GSE PE	1	GSE PE	1	GSE PE	1
Mus 105a ¹	4	Mus 105b ¹	4	Mus 105c ¹	4
Mus (applied)	4	Mus (applied)	4	Mus (applied)	4
Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>
	16		16		16

Second Year

GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 251a	3	GSC 251b	3	GSE 201	3
Mus 205a ¹	3	Mus 205b ¹	3	Mus 205c ¹	3
Mus (applied)	4	Mus (applied)	4	Mus (applied)	4
Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>	Mus (ensemble)	<u>1</u>
	17		17		17

Third Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC 357a	3	GSC 357b	3	GSC 357c	3
Mus (applied)	4	Mus (applied)	4	Mus (applied)	4
Mus (ensemble)	1	Mus (ensemble)	1	Mus (ensemble)	1
Mus (elective) 2-3	<u>2-3</u>	Mus (elective) 2-3	<u>2-3</u>	Mus (elective) 2-3	<u>2-3</u>
	16-17		16-17		16-17

Fourth Year

GSA 361	3	GSA-3	3	Mus (elective)	3
GSB-3	3	GSB-3	3	Mus (elective)	3
Mus (elective)	3	Mus (elective)	3	Mus (recital)	2
Mus (applied)	4	Mus (applied)	4	Mus (applied)	4
Mus (ensemble)	1	Mus (ensemble)	1	Mus (ensemble)	1
Mus 318a	<u>3</u>	Mus 326a	<u>3</u>	Mus 326b	<u>3</u>
	17		17		16

¹Private or class piano may be required in conjunction with Mus 105 and 205.

The student is expected to proficiency GSC 255 to complete 9 hours in GSC-2.

Nursing

Department of Nursing

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>	<u>Summer</u>	<u>Hours</u>
GSA 101a	3	GAS 101b	3	GAS 101c	3	GSA 201a	3
GSB 201a	3	GSB 201b	3	GSB 201c	3	GSC 251a	3
GSC 100		GSC 152	3	GSC 151	3	GSE PE	1
or 101	3	GSD 101b	3	GSD 103	3	GSE PE	1
GSD 101a	3	GSD Math		GSD Math		Chem 240	4
GSD Math	3	or FL	3	or FL	3		12
or FL	3	Nurs 101b	<u>1</u>	Nurs 101c	<u>1</u>		
Nurs 101a	<u>1</u>		16		16		
	16						

Second Year

GSA 201b	3	GSA 201c	3	GSA-3	3
GSC 251b	3	GSC 251c	3	GSE 201 ¹	(3)
GSE PE	1	Nurs 210	2	Nurs 303	3
Bio Sci 301	5	Bio Sci 358	4	Bio Sci 359	4
Phil 302	<u>4</u>	Soc 340	<u>4</u>	Psyc 301	<u>4</u>
	16		16		14

Third Year

GSA-3	3	GSB-3	3	GSC-3	3
GSB-3	3	Nurs 302	8	GSC-3	3
Nurs 301	8	Nurs 355	4	Nurs 363a	9
Nurs 381	<u>3</u>				
	17		15		15

Fourth Year

Nurs 325	8	Nurs 375	8	Nurs 382	6
HEd 355	4	Nurs 363b	6	Nurs 384	2
	<u>12</u>		<u>14</u>	Nurs 363c	<u>8</u>
					16

¹Student nurses to take a proficiency test.

Philosophy

Humanities Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 100 or 101	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL ¹	4	GSD FL ¹	4	GSD FL ¹	4
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	17		17		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
GSE 201	3	Phil 200	4	Phil 240	4
FL	<u>3</u>	FL	<u>3</u>	FL	<u>3</u>
	15		16		16

Third Year

Phil option ²	4	Phil option ²	3	Phil option ²	3
GSB-3	3	GSB-3	3	GSC-3	3
Phil 381a	4	GSC-3	3	Phil 381c	4
Secondary concentration	4	Phil 381b	4	Secondary concentration	6
	<u>15</u>	Secondary concentration	<u>4</u>		<u>16</u>
			17		

Fourth Year

Phil	8	Phil	8	Phil 490	4
Secondary concentration	4	Secondary concentration	4	Secondary concentration	4
Electives	<u>4</u>	Electives	<u>4</u>	Electives	<u>8</u>
	16		16		16

¹Includes Foreign Language Conversation.

²Student must take at least one course from following: 324, GSA 363a,b. Also, he must take one course in value theory.

Physical Education

Education Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 101	3	GSC 152	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD Math	3	GSD Math	3	GSD Math	3
GSE PE	1	GSE PE	1	GSE PE	1
PE ¹	<u>1</u>	PE ¹	<u>1</u>	PE ¹	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a	3	GSB 201b	3	GSB 201c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
Electives	6-8	GSE 201	3	Electives	6-8
		Electives	<u>3-4</u>		
	<u>15-17</u>		15-17		<u>15-17</u>

Third and Fourth Years

At the time of declaring a concentration in physical education, the student should meet with his physical education adviser to discuss the concentration requirements (as they appear in the Undergraduate Catalog. The student should remember the 300-level GS requirements.

¹Selected activity courses and methods at the 100 level as worked out with physical education advisers.

Physics
(With Math)

Education or Science and Technology Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSE PE	1	GSE PE	1	GSE PE	1
Chem 111a	5	Chem 111b	5	Chem 111c	5
Math 111a	<u>5</u>	Math 111b	<u>5</u>	Math 150a	<u>4</u>
	17		17		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSC 151	3	GSC 152	3	GSC 101	3
GSD FL	3	GSD FL	3	GSD FL	3
Math 150b	4	Math 252a	4	Math 252b	4
Phys 211a	<u>5</u>	Phys 211b	<u>5</u>	Phys 211c	<u>5</u>
	18		18		18

Third Year

GSB 201a or 211a	3	GSA-3	3	GSA-3	3
GSC 251a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
Math 300	4	GSC 251b or 251c	3	GSC 251c or 251b or 203	
Math 324	3	Math 320a	3	or 255	3
Phys 300	5	Phys 301a	4	Math 320b	3
	<u>18</u>		<u>16</u>	Phys 301b	<u>4</u>
					16

Fourth Year

GSB-3	3	GSB-3	3	Electives	10
GSC-3	3	GSC-3	3	Phys electives	6
GSE 201	3	Electives	3		
Phys electives	<u>7</u>	Phys electives	<u>7</u>		
	16		16		<u>16</u>

Psychology

Education or Social Sciences Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 101	3	GSC 151	3
GSD 103	3	GSD 101a	3	GSD 101b	3
GSD 112a	3	GSD 112b	3	GSD 112c	3
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201c	3	GSB 201a	3	GSB 201b	3
GSC 251a	3	GSC 251b or		GSC 251c, 251b,	
GSE 201	3	251c	3	203, or 255	3
Elective	3-4	Psyc 211	4	Psyc 301 or 303	4
		Elective	<u>3</u>	Elective	<u>3</u>
	15-16		16		16

Third and Fourth Years

At the time of declaring a concentration in psychology, the student should meet with his psychology adviser to discuss the concentration requirements (as they appear in the Undergraduate Catalog. Student must meet 3rd-level GS requirements of six hours in each of the three areas, A,B, and C.

Public Administration
and Urban Planning

Social Sciences Division

Students are advised to follow the first two years of either the government or the geography course of study.

Sociology & Anthropology

Social Sciences Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 100 or 101	3	GSC 151	3
GSD 101a	3	GSD 101b	3	GSD 103	3
GSD FL	3	GSD FL	3	GSD FL	3
GSE PE	<u>1</u>	GSE PE	<u>1</u>	GSE PE	<u>1</u>
	16		16		16

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b	3	GSC 251c	3
GSE 201	3	Electives	8	Electives	8
Soc 101	<u>4</u>				
	16		17		17

At the time of declaring a concentration in sociology or anthropology, the student should meet with his sociology or anthropology adviser to discuss the concentration requirements (as they appear in the Undergraduate Catalog. Student must meet the 3rd-level GS requirements.

Speech

Education or Fine Arts Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 152	3	GSC 101 or 100	3	GSC 151	3
GSD 103	3	GSD 101a	3	GSD 101b	3
GSE PE	1	GSE PE	1	GSE PE	1
GSE 201	<u>3</u>	Spch 102	<u>4</u>	Spch 104	<u>4</u>
	16		17		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b or		GSC 251c or	
GSD FL	3	203	3	200 or 203	3
Spch 209 or Thea 208	1	GSD FL	3	GSD FL	3
Spch 200	4	Spch 209 or Thea 208	1	Spch 209 or Thea 208	1
	<u>3</u>	Spch 202	<u>3</u>	Spch 205	<u>4</u>
	17		16		17

Third Year

GSA-3	3	GSA-3	3	GSC 354b	3
GSB-3	3	GSB-3	3	Speech 309 or	
Spch 301	4	GSC 354a	3	Thea 208	1
Spch 309 or Thea 308	1	Spch 309 or Thea 308	1	Spch electives	4
Electives	<u>6</u>	Spch electives	<u>4</u>	Electives	8
	17		14		<u>16</u>

Fourth Year

Spch electives	4	Spch electives	4	Spch electives	4
Electives	<u>12</u>	Electives	<u>12</u>	Electives	<u>12</u>
	16		16		16

Theater

Fine Arts Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 101c	3
GSB 101a	3	GSB 101b	3	GSB 101c	3
GSC 100 or 101	3	GSC 151	3	GSC 152	3
GSD 103	3	GSD 101a	3	GSD 101b	3
GSE PE	1	GSE PE	1	GSE PE	1
GSE 201	<u>3</u>	GSC 200	<u>4</u>	Spch 104 or 200	<u>4</u>
	16		17		17

Second Year

GSA 201a	3	GSA 201b	3	GSA 201c	3
GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 251a	3	GSC 251b	3	GSC 203	3
GSD FL	3	GSD FL	3	Thea elective	3
Thea 111a	3	Thea 204	4	GSD FL	3
	<u>15</u>		<u>16</u>	Thea 208	<u>1</u>
					16

Third Year

GSA-3	3	GSA-3	3	Thea electives ¹	8
GSB-3	3	GSB-3	3	Thea 308	1
Thea 308	1	Thea electives	3	Electives	6
Electives	9	Thea 207	4		
	<u>16</u>	Electives	<u>3</u>		<u>15</u>
			16		

Fourth Year

Thea elective	4	Thea 402	4	Thea 438	4
Electives	12	GSC 354a	3	GSC 354b	3
	<u>16</u>	Electives	<u>9</u>	Electives	<u>9</u>
			16		16

¹See Undergraduate catalog - Theater Concentration

Zoology (With Chemistry)

Science and Technology Division

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a	3	GSA 101b	3	GSA 201c	3
GSA 201a	3	GSA 201b	3	GSB 101c	3
GSB 101a	3	GSB 101b	3	GSD 103	3
GSD 101a	3	GSD 101b	3	GSE PE	1
GSE PE	1	GSE PE	1	Chem 111c	5
Chem 111a	<u>5</u>	Chem 111b	<u>5</u>		
	18		18		<u>15</u>

Second Year

GSB 201a or 211a	3	GSB 201b or 211b	3	GSB 201c or 211c	3
GSC 151	3	GSC 152	3	GSC 101	3
GSD FL	3	GSD FL	3	GSD FL	3
Zool 102	5	GSD Math	3	GSD Math	3
Chem 235	<u>5</u>	Zool 103	<u>5</u>	Bot 202	<u>5</u>
	19		17		17

Third Year

GSC 251a	3	GSA 358a	3	GSA 358b	3
GSD Math	3	GSB-3	3	GSB-3	3
Chem 305a	5	GSC 251b or 251c	3	GSC 251c or 251b or 203 or 255	3
Zool 202	5	Chem 305b	5	GSE 201	3
		Zool 300	5	Zool 401	<u>5</u>
	<u>16</u>		<u>19</u>		17

Fourth Year

GSC-3	3	GSC-3	3	Zool 382c	$\frac{1}{2}$
Phs1 433	4	Zool 313	3	Electives	15
Zool 310	5	Zool 480	3		
Zool 382a	$\frac{1}{2}$	Zool 382b	$\frac{1}{2}$		
Electives	<u>3</u>	Electives	<u>6</u>		
	15 $\frac{1}{2}$		15 $\frac{1}{2}$		<u>15$\frac{1}{2}$</u>

Botany, Biological Sciences, Zoology, Medical Technology,
Premedicine, Predentistry, Preveterinary

First Year

<u>Fall</u>	<u>Hours</u>	<u>Winter</u>	<u>Hours</u>	<u>Spring</u>	<u>Hours</u>
GSA 101a ¹	3	GSA 101b ¹	3	GSA 253	3
GSA 201a	3	GSA 201b	3	GSD 103	3
GSC-1	3	GSC-1	3	PE	1
GSD 101a	3	GSD 101b	3	Chem 111c	5
Chem 111a	5	Chem 111b	5	Zool 103 or	
				Bot 202	5
	<u>17</u>		<u>17</u>		<u>17</u>

Biology, Chemistry, Engineering, Biology or Zoology would be appropriate areas of concentration for Premedicine, Predentistry, Preveterinary, and Medical Technology.

¹Required for the concentration

Zoc

Fa

GSI

GSI

GSI

GSI

GSI

Ch

GSI

2

GSC

GSI

Zoc

Ch

GSC

GSI

Ch

Zoc

GSC

Phs

Zoo

Zoo

Ele



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TO EXALT BEAUTY

*In God,
in nature, and
in art;
Teaching how to love the best
but to keep the human touch;*

TO ADVANCE LEARNING

*In all lines of truth
wherever they may lead,
Showing how to think
rather than what to think,
Assisting the powers
of the mind
In their self-development;*

TO FORWARD IDEAS AND IDEALS

*In our democracy,
Inspiring respect for others
as for ourselves,
Ever promoting freedom
with responsibility;*

TO BECOME A CENTER OF ORDER AND LIGHT

*That knowledge may lead
to understanding
And understanding
to wisdom.*

Financial Assistance
1965-1967



Southern Illinois University Bulletin

SOUTHERN ILLINOIS UNIVERSITY BULLETIN
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This Issue

of the *Southern Illinois University Bulletin* covers in detail questions concerning financial assistance and applies to both the Carbondale Campus and the Edwardsville Campus. It supersedes Volume 6, Number 8.

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Schedule of Classes. Please specify *quarter* (fall, winter, spring, or summer) and *campus* (Carbondale or Edwardsville).

General Studies Catalog.

Graduate Catalog.

Division of Technical and Adult Education.

Financial Assistance.

Undergraduate Catalog. The catalog will be available (by October, 1965) for examination in high school guidance offices and libraries throughout Illinois and in some other states. Copies will be furnished free to educational institutions upon request and to new students upon matriculation. The catalog may be purchased at the University Bookstore for \$1; mail orders should be sent to Central Publications and must include remittance payable to Southern Illinois University.

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BOARD OF TRUSTEES

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Financial Assistance



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The basic goal of the student work and financial assistance program at Southern Illinois University is to enable talented young men and women who may lack financial resources to enter and continue experiences in higher education. The program has been organized to function as an integral part of the total educational experiences of the student. An attempt is made not only to assist deserving students with their financial obligations through the program but also to contribute to their general development and learning experiences.

The program of student work and financial assistance includes work on- and off-campus, cooperative work-study programs, summer employment, the federal work-study program and scholarships, awards, prizes, grants-in-aid, private agency awards, student loan funds.

The comparative limitations of such forms of assistance, in terms of both number and amounts available, make it inadvisable for an undergraduate student to expect to meet all university expenses from such sources. The family, including parents, friends, and relatives, is the primary resource for a student's college costs. The student himself normally supplies one-third to one-half of his finances through work during school or during a selected quarter of nonattendance, and through his savings. The financial assistance program assists in making up the difference between college costs and the student's income and other resources.

The applications for both student work and financial assistance require the applicant to estimate his budget for the coming year in terms of both income and expense. An estimate of certain expenses, including room and board, may be obtained from the Admissions Office or from *Guidelines for Prospective Students* issue of the *Southern Illinois University Bulletin*. Applications and information pertaining to student work are available at the Student Work and Financial Assistance Office on the campus at Carbondale and Edwardsville.

TYPES OF FINANCIAL ASSISTANCE

SCHOLARSHIPS

Scholastic potential and financial need are the two most important criteria utilized in selecting recipients of scholarships. Freshman applicants must have ranked in the upper third of their graduating class and have achieved

a minimum comprehensive high school average equal to that of *B*. Enrolled students at the University must have achieved a minimum over-all average of *B* for all course work completed at the university level.

The degree of need may also be used in determining the amount of assistance granted from a particular scholarship fund.

Other factors being equal, the students with the highest grade averages will be given preference in determining recipients of the scholarships.

In order to stimulate attendance at the junior colleges in Illinois and to encourage the most qualified graduates of junior college programs to attend Southern Illinois University, the Board of Trustees has established 50 two-year tuition scholarships annually for the most deserving graduates of junior college programs in the state of Illinois. These scholarships pay tuition only, and for a student to be eligible, he must:

1. Be a graduate of an Illinois Junior College;
2. Be in the upper 1/4 of his class or have a 4.00 (B) grade point average;
3. Be a full-time student at the University—12 credit hours per quarter;
4. Maintain a 4.0 (B) grade point average while at the University.

AWARDS

Financial assistance is occasionally granted to students who have evidenced superior potential either at the high school or the university level in either scholarly or cocurricular endeavors. Freshman applicants for awards are required to have ranked in the upper half of their graduating class and to have achieved a minimum comprehensive high school average of *C*. Enrolled students must have achieved a minimum over-all average of *C* for all work completed at the university level.

As a part of the award program, the Board of Trustees of the University has established tuition awards known as Southern Illinois University Scholarship and Activity Awards. Normally, this is the only form of scholarship or award assistance for which entering students may be considered other than state-wide programs as enumerated on pages 12–15 of this bulletin.

PRIZES

Prizes may be awarded to students who have evidenced superior achievement in specific areas or departments of the University. These prizes frequently take the form of books, medals, or trophies rather than money and are presented at various times during the year. Eligibility varies considerably from one prize to another. Interested students are invited to contact the specific departments or groups concerned with selecting the recipients for further details.

GRANTS-IN-AID

Frequently, organizations or individuals establish funds at the University to assist certain students with their educational expenses. Usually such students are selected by the donor, although recommendations are sometimes made through the Scholarships and Loans Committee or the various de-

partments of the University. Specific criteria, including grade requirements, used for the selection of recipients of these grants are established by the donor. Recipients of such aid should be full-time students and must have achieved a minimum over-all average of *C* for all work completed at the university level.

PRIVATE AGENCY AWARDS

Industries and private organizations may provide funds to individuals either directly or through the Scholarships and Loans Committee. The requirements relative to each of these awards are specified by the individual donors. Generally, application must be made directly to the donor; the University will assist interested students in applying for such awards.

STUDENT LOAN FUNDS

CARBONDALE CAMPUS

Through the generosity of friends of the University, several short-term loan funds have been established to be used by needy and deserving students. There are two basic requirements which are applicable to most of these funds: The applicant must be a full-time student who has completed one quarter in attendance at the University, and he must have a minimum comprehensive university average of *C*. Amounts available vary with the individual loan funds. Generally, freshmen and sophomores may borrow up to \$75; juniors, seniors, and graduate students are permitted to borrow up to \$150. In addition, a private foundation has established a loan fund at the University from which qualified juniors, seniors and graduates under 25 years of age may borrow up to \$600. Another private foundation has established a loan fund from which qualified graduates may borrow up to \$500 for a period of three years. The rate of interest and method of repayment vary with the particular loan fund, but the usual rate of interest on funds administered directly by the University is three per cent per year.

EDWARDSVILLE CAMPUS

Several short-term loan funds have been established. The applicant must be a full-time student who has completed 30 hours at Southern Illinois University and must have a minimum cumulative average of *C*. Students who meet these requirements may normally borrow from \$25 to \$75 for a period of four months. A service fee of one per cent of the principal is charged for such loans.

Students who have completed their first year of college are eligible to apply through the co-ordinator of financial assistance for loans from local and home-town banks which are members of the United Student Aid Fund, Inc., program. Undergraduates are eligible to borrow \$1,000 per year up to a total of \$4,000. Graduate students are eligible to borrow \$2,000 per year up to a total of \$4,000. Interest rate is 6 per cent per annum (simple interest calculated on declining balances). Installment repayments begin four months after completion of undergraduate or graduate education.

APPLICATION PROCEDURE FOR FINANCIAL ASSISTANCE

IF YOU HAVE NOT ATTENDED A COLLEGE OR A UNIVERSITY

1. Apply for admission to the Admissions Office of the campus you plan to attend. Request that your principal forward a transcript of your high school record through your seventh semester. It is advisable that this be done shortly after the beginning of your final semester of high school.

2. Request an application for the financial assistance program from the Financial Assistance Office of the campus you plan to attend. Request that your high school principal complete the postal card accompanying this application. Arrange to take the test battery administered by the American College Testing Program (A.C.T.) ; information relative to testing dates may be obtained from your high school guidance director or principal or from the Registrar's Office of the campus which you plan to attend.

3. Submit your application for financial assistance. Do not apply for a specific scholarship or award. The Scholarships and Loans Committee of the University will evaluate each applicant in terms of his eligibility for all forms of available assistance. Applications to be considered for the fall quarter must be returned to the Financial Assistance Office of the appropriate campus between January 1 and May 15.

4. Applicants for assistance to become effective in the fall will be notified of decisions concerning their applications during the summer prior to the opening of the fall quarter.

IF YOU HAVE ATTENDED ANOTHER COLLEGE OR UNIVERSITY

1. Apply for admission to the Admissions Office of the campus you plan to attend. Request that the registrar of each school you have attended send a transcript of your record to that office. Applications for financial assistance cannot be considered prior to completion of these procedures.

2. Request an application for the financial assistance program from the Financial Assistance Office of the campus you plan to attend.

3. Submit your application for financial assistance. Do not apply for a specific scholarship or award. The Scholarships and Loans Committee of the University will evaluate each applicant in terms of his eligibility for all forms of available assistance. Applications to be considered for the fall quarter must be returned to the Financial Assistance Office of the appropriate campus between January 1 and May 15.

4. Applicants for assistance to become effective in the fall will be notified of decisions concerning their applications during the summer prior to the opening of the fall quarter.

IF YOU ARE CURRENTLY ENROLLED AT SOUTHERN ILLINOIS UNIVERSITY

1. Determine whether you meet the minimum requirement for any of the forms of financial assistance currently available. Generally, scholarships

require a minimum over-all university average of *B*, and awards require a *C*. Consult the earlier sections of this bulletin for details.

2. Obtain an application for the financial assistance program from the Financial Assistance Office of the campus you are attending.

3. Submit your application for financial assistance. Do not apply for a specific scholarship or award. The Scholarships and Loans Committee of the University will evaluate each applicant in terms of his eligibility for all forms of available assistance. Applications to be considered for the fall quarter must be returned to the Financial Assistance Office of the appropriate campus between January 1 and May 15.

4. Applicants for assistance to become effective in the fall will be notified of decisions concerning their applications during the summer prior to the opening of the fall quarter.

In addition to the various forms of financial assistance administered through the Scholarships and Loans Committee, there are several other forms of assistance available to students at the University. Their descriptions follow.

FEDERAL ASSISTANCE

NATIONAL DEFENSE STUDENT LOAN PROGRAM

The National Defense Student Loan Program, established under Title II of the National Defense Education Act of 1958, is a long-term program from which eligible and deserving students may be granted substantial loans to supplement other income for educational purposes.

ELIGIBILITY AND TERMS

1. *United States Nationals.* Only undergraduate or graduate students who are United States Nationals (citizens or persons who are in the U.S. in a permanent resident status) are eligible to borrow under terms of this student loan program.

2. *Hours.* Undergraduate students must carry a minimum of eight (8) credit hours per quarter. Graduate students must carry a minimum of six (6) credit hours per quarter and four (4) credit hours during the eight-week summer session.

3. *Scholarship.* An incoming freshman applicant must have ranked in the upper third of his graduating class to be considered for loan assistance. A freshman not meeting this requirement may make application during his first quarter of attendance and if academically eligible as noted below will receive payment at the beginning of the following quarter. Undergraduate students must have and maintain a 3.00 (*C*) grade point average for all work at Southern Illinois University. A graduate student enrolling for the first time, must be unconditionally accepted to the graduate school and working toward a degree. Graduate students must have and maintain a 4.00 (*B*) over-all grade point average and have a 4.00 grade point average for all work taken at Southern Illinois University.

4. *Need.* The primary condition of eligibility is the applicant's need of the requested loan to complete his course of study. The financial capa-

bilities of both the applicant and his family (even in the case of a married student) will be evaluated in determining need. The University appreciates the fact that some students may wish to be financially independent, but this in and of itself does not justify need. A single student owning or possessing an automobile is requested not to seek assistance through this fund, unless he commutes or has other special circumstances.

5. *Amount of Loan.* The amount of the loan shall not be more than the borrower actually needs to make up the difference between his resources and his college-related expenses. In view of the estimated expenses at the University and the opportunity for part-time employment and scholarship and award aid, the normal maximum loan will be limited to \$250 per quarter for undergraduates and \$625 per quarter for graduate students. Whatever the actual need, the Act sets maximum limits of \$1,000 in any one academic year and \$5,000 in the aggregate for undergraduate students, and \$2,500 in any one academic year and \$10,000 in the aggregate for graduate students.

6. *Use of Loan.* A National Defense Student Loan will be used only for university-related expenses: tuition and required fees, books and supplies, room and board, ordinary and necessary personal maintenance. It shall not be used for car payments, marriage expenses, refinancing accumulated debts, moving to a place of employment, buying equipment to start a business, or buying a house.

7. *Special Consideration.* While making loans available to needy students in any field, the Act specifies that "in the selection of students to receive loans . . . special consideration shall be given to: (a) students with a superior academic background who express a desire to teach in elementary and secondary schools, and (b) students whose academic background indicates a superior capacity or preparation in science, mathematics, engineering, and modern foreign language."

8. *Promissory Note.* The borrower shall be required to sign a promissory note payable to Southern Illinois University.

9. *Interest.* No interest is charged while the borrower is in full-time attendance at an institution of higher education or during any period, not exceeding three years, that he is serving in the armed forces of the United States. Simple interest at the rate of three per cent per year on the unpaid balance will begin to accrue one year from the date the borrower ceases to be a full-time student.

10. *Repayment.* Repayment must begin not later than two years after a borrower ceases to be a full-time student at an institution of higher education. A schedule of installment payments commensurate with the borrower's financial status must be arranged at the time of his separation from the University. Repayment in accordance with a ten-year schedule of graduated periodic installments is the maximum permissible under terms of the Act.

11. *Cancellation Provisions.* The loan, and interest thereon, of any borrower who serves as a full-time teacher in a public elementary or secondary school is canceled up to a maximum of fifty per cent, at the rate of ten per cent of the amount of the loan plus interest thereon, which was unpaid on

the first day of such service, for each academic year of service. The Act also provides that liability for repayment of the National Defense Student Loan is cancelled upon the death of the borrower, or in the event that he becomes totally and permanently disabled.

12. *Loyalty Oath.* Each applicant for a loan must subscribe to an oath of allegiance to the United States of America and this oath must be taken and subscribed to before a notary public or other officer authorized to perform such function under Illinois law. This must be done before the application can be considered.

13. *Married Students.* Students married less than one year are not eligible for loan consideration. However, they may apply with the understanding that they will receive no portion of the loan until they have been married for a year. Married students applying for loans offer an extraordinary problem of need assessment, because many extra expenses considered minimum for married status are difficult to classify as college-related expenses. Ordinarily, need will be measured on a standard of expectation of family-help and self-help along with the student's own presentation of his problem and estimated need.

14. *Applications.* Application forms may be obtained in the Financial Assistant's Office. These applications should be returned to this office after being carefully and completely prepared by the applicant. Blank items will delay action on the application. The applicant will be informed of the Scholarships and Loans Committee's decision within a reasonable period.

FEDERAL ASSISTANCE FOR MILITARY VETERANS

Educational benefits for most veterans of World War II have elapsed. A person having a service-incurred disability may qualify as a recipient of benefits under Public Law 16 or 894, the latter being an amendment to Public Law 16. Public Law 16 is intended for veterans who received their disability between September 16, 1940, and July 25, 1947, while Public Law 894 is intended for veterans who received their disability between June 27, 1950, and an unestablished date in the future. Under Public Laws 16 or 894 the veteran's tuition, fees, special equipment and supplies, and subsistence will be paid for by the United States government through the Veterans Administration.

Persons who have been in active military service between June 27, 1950, and January 31, 1955, who have served at least ninety days, and who have been discharged under conditions other than dishonorable may be eligible for educational benefits under the Veterans Readjustment Assistance Act of 1952 (Public Law 550 or "Korean G.I. Bill"). Application forms and additional information concerning these benefits may be obtained from the Registrar's Office, the Student Affairs Division, the Veterans Administration, or the local Illinois Veterans Commission Office. Veterans are urged to apply for training at least two months prior to enrolling in the University.

Experience has shown that a period of two or three months elapses before a veteran participating in such a program receives his first check. It is advisable, therefore, that each veteran be prepared to finance himself during his first two or three months of attendance at the University.

FEDERAL ASSISTANCE FOR NURSING

The Nursing Student Loan Fund established under part B of Title VIII of Public Health Service Act as amended by the Nurses Training Act of 1964, is a long-term program from which eligible and deserving students may be granted substantial loans to supplement other income for educational purposes. The purpose of this program is to increase the opportunities for training of nurses through stimulating and assisting in the establishment in professional schools of nursing loan funds from which low interest loans may be made to students in need thereof to pursue their course of study.

ELIGIBILITY AND TERMS

1. *Grades.* High school seniors in the upper one third of their graduating class may apply for a loan during their last semester if they have been admitted to the University. Undergraduate students must have and maintain a 3.00 (*C*) overall grade point average and a 3.00 (*C*) grade point average for all work at Southern Illinois University.

The graduate students must have and maintain a 4.00 (*B*) overall graduate grade point average and a 4.00 (*B*) grade point average for all graduate work at Southern Illinois University.

2. *Hours.* Undergraduate students must carry a minimum of twelve (12) credit hours per quarter and ten (10) credit hours during the eight-week summer session.

Graduate students must carry a minimum of ten (10) credit hours per quarter and six (6) credit hours during the eight-week summer session.

3. *Miscellaneous.* Applicants must be enrolled in college-grade courses leading to an associate, bachelor's, master's or doctoral degree.

Graduate students must be unconditionally admitted to the Graduate School and working toward a degree.

An applicant or recipient must not be on disciplinary probation.

Applicants must be citizens of the United States or United States nationals.

Students who attend the summer sessions only are not eligible to apply.

The law states that in designating a loan recipient, a school shall give preference to persons who enter a school of nursing as first year students after September 4, 1964.

4. *Basis of Loans (small).* In addition to the above-stated criteria, all recipients of loans will be determined on the basis of the financial need of the student. This need will also determine the amount of the loan granted during a given period. The amount of the loan shall not be more than the borrower actually needs to make up the difference between his resources and his college-related expenses.

5. *Use of Loan.* Nursing Student Loans will be used only for University-related expenses: tuition and required fees, books and supplies, room and board, ordinary and necessary personal maintenance. It shall not be used for car payments, marriage expenses, re-financing accumulated debts, moving to a place of employment, buying equipment to start a business or

buying a house. Students must present adequate justification for the possession or operation of an automobile at Southern Illinois University to be eligible for a loan.

6. *Married Students.* Applicants married less than one year at the time the first payment of the loan request would be due are ineligible for loan consideration. Married students applying for loans offer a unique problem of need assessment because many extra expenses considered minimum for married status are difficult to classify as college-related expenses. Ordinarily, need will be measured on a standard of expectation of family-help and self-help along with the student's own presentation of his problem and estimated need. Financial statements must be completed by both sets of parents.

7. *Terms.* In general terms, repayment of the principal of the loan, plus interest computed at the "going Federal rate," which for 1966 is 4½ per cent per annum, is to be accomplished at the rate of ten (10) per cent per year, beginning one year after completion of, or withdrawal from the educational program. The repayment schedule may be deferred up to three years if the borrower enters the military service. If possible, early repayment of the loan is encouraged. The borrower shall be required to sign a promissory note payable to Southern Illinois University.

8. *Cancellation Provisions.* The loan, and interest thereon, of any borrower who serves as a Professional Nurse in a nonprofit or public institution (including teaching in any of the fields of nurse training or service as an administrator, supervisor, or consultant in any of the fields of nursing) is canceled up to a maximum of fifty (50) per cent, at the rate of ten (10) per cent of the amount of the loan plus interest thereon, which was unpaid on the first day of such service, for each year of service. The Act also provides that liability for repayment of the Nursing Student Loan is canceled upon the death of the borrower, or in the event that he becomes totally and permanently disabled.

9. *Amount of Loan.* The maximum amount available to an individual borrower in an academic year is \$1,000.

10. *Restrictions.* A student who is enrolled in a school of nursing that participates in the Nursing Student Loan Program is prohibited by the Nurse Training Act of 1964 from receiving a loan from any other Federal loan fund.

11. *Applications.* Application forms may be obtained at the Student Work and Financial Assistance Office. The application must be returned to the Student Financial Assistance Office after being carefully and completely prepared (in ink or typed) by the applicant. Blank items will delay action on the application. The applicant will be informed of the Scholarships and Loans Committee's decision within a reasonable period of time.

PUBLIC LAW 634

Benefits under Public Law 634 are available to the child or children of a person who died of an injury or disease incurred or aggravated in the line of duty in active service in the armed forces during World War I, World War II, or the Korean conflict and whose service did not terminate under

dishonorable conditions. In addition, if the veteran's child served on active duty with the armed forces he must have been separated under conditions other than dishonorable.

Payments cannot be made while the veteran's child is serving on a tour of duty with the armed forces. In general the same rules apply to this law as to Public Law 550. Application forms may be obtained at the Registrar's Office, the Veterans Administration, or a local Illinois Veterans Commission office.

PUBLIC LAW 815

Public Law 815 makes vocational rehabilitation training available to veterans who incurred disabilities as a result of service in the armed forces during the periods of July 26, 1947, to June 26, 1950, and February 1, 1955, to the present. If the veteran is receiving compensation from the government because of disability incurred during either of these periods, he is eligible to apply for vocational rehabilitation. Under Public Law 815, his tuition, fees, and subsistence will be paid through the Veterans Administration. Further information may be obtained from the Registrar's Office, the Veterans Administration, or a local Illinois Veterans Commission office.

STATE ASSISTANCE

STATE TEACHER EDUCATION SCHOLARSHIPS

State scholarships are awarded each year through the office of the State Superintendent of Public Instruction to selected students who plan to enter the teaching profession. Graduates of recognized high schools who are in the upper half of their graduating classes are certified by the principals to county superintendents, who transmit these names to the Superintendent of Public Instruction. The Superintendent, in turn, may award scholarships to the highest-ranking graduates who signify their intentions to prepare to teach in the Illinois public schools. The scholarship covers the student's tuition and activity fees. Holders of these scholarships must apply for admission to the University not later than August 15 of the year in which the scholarship is awarded. Such a student must be registered in a teacher training program while using the scholarship. If a scholarship holder does not register for the next regular quarter following receipt of the scholarship, or if, having registered, he withdraws from the University, he forfeits his scholarship, unless he is granted a leave of absence by the University. Any student holding a scholarship who needs a leave of absence for the purpose of earning funds to defray his expenses while in attendance, on account of illness, or because of entrance into military service, may be granted such leave and allowed a period not to exceed six years in which to complete his course at the University. Request for a leave of absence should be addressed to the Registrar. A forfeited scholarship may be issued to the next highest-ranking student as shown on the list submitted to the Superintendent of Public Instruction. Recipients need to bring their scholarships to the Registrar's Office where they are kept on file. Currently, this scholarship covers tuition, student activity fee, and graduation fee.

STATE SCHOLARSHIP ACT

The state scholarship program, which is applicable at Southern Illinois University, exempts the student from certain fees. Interested students should consult their high school office early in their senior year for information on the program.

In addition to the regular program, there is an upperclass award program for sophomores, juniors, and seniors at the University. To participate in this program, a student must apply in the spring and must be ineligible to participate in the regular program. Details may be obtained from the Student Financial Assistance Office.

GENERAL ASSEMBLY SCHOLARSHIPS

Each member of the General Assembly (Senator or Representative) may nominate annually two persons of school age and otherwise eligible, from his district, one of which shall receive a certificate of scholarship in the University of Illinois, and the other a certificate of scholarship in any other state-supported university designated by the member. Interested students planning to attend Southern Illinois University should contact their Senator or Representative. This scholarship exempts the student from the paying of tuition, student activity fee, and graduation fee.

COUNTY SCHOLARSHIPS

This program provides for the awarding of two scholarships annually in each county to qualified graduating seniors in high school. The recipients will be selected on the basis of a competitive examination: the test battery administered through the American College Testing Program (A.C.T.). To be eligible, an applicant must be a resident of the county in which he applies. No student who has taken normal school, college, university, or other training following completion of a four-year high school course is eligible. Dates of application and procedures should be requested of the local high school principal or county superintendent of schools. This scholarship entitles the student to tuition, activity fee, and graduation fee for a period of four calendar years.

VOCATIONAL REHABILITATION

Under the State Board for Vocational Education is a division for the vocational rehabilitation and placement in remunerative employment of persons whose capacity to earn a living is or has been impaired. This includes those with physical handicaps of various kinds. Approved students receive all registration and tuition fees, book rental, and school supplies for nine months per year.

Persons who wish to consult with a representative may call at the Carbondale field office, located at 17B Chautauqua Housing Area on campus. Other field offices are maintained in the Murphy Building, Collinsville Ave., East St. Louis, and at 307 Henry, Alton. Students from other parts of the state who are now receiving training through the Illinois Division of Vocational Rehabilitation may consult any representative of the Board.

ILLINOIS MILITARY SCHOLARSHIP

Any person who served in the armed forces of the United States during World War I or World War II (including all service between September 16, 1940, and an undetermined date to be established in the future) may be eligible for the benefits of the Illinois Military Scholarship. To be eligible a person must have been (1) a resident of Illinois at the time of entering the service; or, if not an Illinois resident, a student at Illinois State University, Northern Illinois University, Eastern Illinois University, Western Illinois University, Southern Illinois University, or the University of Illinois at the time of his enlistment or induction; and (2) honorably discharged or separated.

This scholarship is awarded for four calendar years. It may be used for resident or extension study and covers tuition, activity fee, and graduation fee. Application for this scholarship should be directed to the Registrar's Office and must be accompanied by a copy of the discharge or separation papers.

THE GOVERNOR'S COMMITTEE FOR VETERAN'S REHABILITATION AND EMPLOYMENT

This committee will assist any veterans, but gives aid primarily to ex-service-men and ex-servicewomen with impaired health or with limited physical abilities. Such persons may receive, at state expense, vocational training and education, plus health restoration treatments and prosthetic appliances. After proper training, they are given assistance in obtaining employment.

SCHOLARSHIPS, AWARDS, GRANTS-IN-AID, PRIZES

CARBONDALE CAMPUS

Abbott Foundation Grant-in-Aid
 Alpha Delta Sigma Advertising Award
 Alpha Phi Omega Scholarship (Zeta Nu Chapter)
 Altrussa Club of Greater Charleston, South Carolina Scholarship Fund
 American Chemical Society Fellow
 American Chemical Society Scholar
 American Legion Auxiliary Unit 25 of Princeton, Indiana Grant-in-Aid
 American Legion Department of Illinois Prize
 American Legion Poppy Contest Award
 Asian Studies Scholarship
 Aviston Chamber of Commerce Award
 Baseball Grant-in-Aid
 Boosters Club of Hinsdale Township High School Scholarship
 Borden Freshman Prize
 Boys Tri-Ship Club of New Trier High School
 Brunswick Area Student Aid Fund
 Buddy Tuttle Memorial Scholarship
 Bunker Hill Air Force Base Officers Wives Club Award
 Cahokia Commonfields High School Student Council Grant
 Carbondale Branch A.A.U.W. Scholarship
 Carbondale Community High School Parents and Teachers Association Scholarship
 Central Illinois Grant-in-Aid
 Central Illinois Public Service Company Scholarship
 Chemistry Graduate Fellowship Fund

Clarence V. Scheel American Legion Post No. 292 Award
C. M. Gooch Foundation Grant-in-Aid
Cook Foundation Scholarship
Copley Newspapers Scholarship
Dan Hopkins Advertising Scholarship
David J. Carver, Jr. Memorial Scholarship
Delta Sigma Theta Scholarship Award
Delta Theta Tau Scholarship in Home Economics
Department of Illinois Child Welfare Scholarship
District No. 25 Illinois Federation of Womens Clubs Scholarship
Dr. James W. Barrow Memorial Scholarship
Eastern Star of Illinois Grant-in-Aid
Edna C. Schultz Memorial Fund Grant-in-Aid
Edward Arthur Mellinger Education Foundation Award
Eleanor P. Eells Scholarship
Elementary Education Prize
Elgin High School Student Body Scholarship
Elijah P. Lovejoy Scholarship Grant
Elks National Foundation
Epsilon Lambda Award (Delta Theta Tau)
Eureka Grand Chapter of Eastern Star Scholarship
Evanston Kiwanis Club Award
Evergreen Park Community High School Scholarship
Faculty-Staff Aid to Students
Frank A. Burhess Foundation Scholarship
Frank Gannett Newspaperboy Scholarship
Frankfort Community High School Award
Fraternal Order of Eagles Memorial Foundation Award
Friends Foundation, Inc., Grant-in-Aid
F S Services, Inc. Award
George M. Pullman Educational Foundation
George Washington Carver Senior High School
Granite City Scholarship Foundation
Harry Bobbitt Memorial Scholarship Fund
Hearst Foundation Journalism Award
Helen Shuman Graduate Scholarship
Henry Bunn Memorial Scholarship Fund
Herbert T. McLean and Edyth M. Lanning Memorial Award
Highland Park High School Scholarship
Home Economics Scholarship
House of Kings Scholarship Award
Illinois Association of Highway Engineers Scholarship
Illinois Association of Park Districts Award
Illinois Congress of Parents and Teachers Association
Illinois Congress of Parents and Teachers Special Education Scholarship
Illinois Elks Association Award
Illinois Health Improvement Association Scholarship
Illinois Production Credit Associations Award
Illinois State Council of Carpenters Scholarship Award
Illinois Welfare Association District 10, Social Work Scholarship Award
Intergreek Honor and Service Award
James E. Cook Educational Scholarship
James Ford Bell Technological Award
James H. Stoevers Memorial Fund for Retarded Children Award
Jewel Tea Company Grant-in-Aid
Joe Dougherty Award and Don Cross Scholarship
John Fitzgerald Kennedy Memorial Scholarship Fund
Joliet Township High School and Junior College Scholarship
June Vick Memorial Scholarship

Junior Achievement Award
 Junior Women's Club of Illinois Award
 Kathleen Easley Memorial Award
 Kiwanis Education Fund
 Lake Placid Club Education Foundation Scholarship Fund
 Larry Mann Advertising Scholarship
 Lemasters Fine Arts Award
 Liberty Baptist Church Scholarship Council Fund
 Limerick Finance Scholarship
 Luxene and Luxene Processing Laboratories Scholarship in Dental Laboratory
 Technology
 Marathon Oil Foundation Award
 Mary Louise Barnes Alumnae Scholarship in Home Economics
 Maud E. Warwick Scholarship
 Murphysboro Shrine Club Scholarship
 National Association of American Business Club Scholarship
 National Scholarship Trust Fund
 National Society of Interior Designers Award
 NCAA Awards
 Newspapers Distributors Association of Chicago Scholarship
 North Shore Community Service Award
 NSSFNS Grant-in-Aid
 Nurses' Training Program Award
 P.E.O. International Peace Scholarship
 Peoples Baptist Church Award
 Phelps-Stokes Fund
 Phi Eta Sigma Scholarship Prize
 Plumbers and Steamfitters Local No. 160 Scholarship
 Practical Nursing Award
 Presser Foundation Music Scholarship
 Princeton High School Scholarship
 Psi Iota Xi, Alpha Tau Chapter Grant-in-Aid
 Quill and Scroll Foundation Scholarship
 Randolph County Education Association Grant-in-Aid
 Roscoe Pulliam Memorial Alumni Scholarship
 Sahara Coal Company Awards in Forestry
 Saluki Award Fund
 School of Technology Fellowship for Industry
 Sigma Pi Memorial Fund
 Sigma Gamma Rho Sorority Grant-in-Aid
 Small Business Institute Scholarship Fund
 Society of Crippled Children and Adults of Sangamon County Award
 Southern Illinois District Council Activity Awards
 Southern Illinois Editorial Association Award—Community Journalism
 Southern Illinois League for Nursing Award
 Southern Illinois Park and Recreation Award
 Southern Illinois Reunion Council Award
 Southern Illinois Symphony Orchestra Award
 S.I.U. Faculty Mine Memorial Scholarship
 St. Joseph Memorial Hospital Auxiliary Award
 Summer Stock Company Activity Award
 Susie E. Ogden Scholarship
 Technical and Adult Education Awards and Prizes
 The General Henry H. Arnold Educational Fund Grant-in-Aid
 The Urban League of Pittsburgh, Inc. Grant-in-Aid
 Thompson Point Scholarship
 Topper's Club Award
 Transportation Club of Little Egypt Award
 Tri-County Electric Scholarship Award

University Women's Club Award
Washington County H.I.A. Honor Award
West Frankfort Business and Professional Womens Club Award
West Frankfort Senior Women's Club Scholarship
Western Electric Scholarship
White Plains Student Aid Society, Inc.
William J. Cook Fund
Women's Relief Corps, G.A.R.
Woody Hall Scholarship
World University Service Award
Youth Bowling Championship Grant-in-Aid
Yuill Music Company Scholarship

EDWARDSVILLE CAMPUS

Alumni Scholarship Fund
Baseball College Scholarship Plan
B. F. Goodrich Foundation Inc.
Catholic War Veteran's Inc.
Collinsville Education Association
Collinsville Lions Club Tuition Award
East St. Louis Opti-Mrs Club
Edward A. Mellinger Education Foundation
Elijah P. Lovejoy Memorial Grants
Elks Scholarship Fund
Federated Unity Club Award
Formosa Student Fund
Grand Chapter Order of Eastern Star Scholarship Grant
Grand Guardian Council of Illinois I.O.J.D.
Granite City Scholarships Foundation
Henry Mitchell Post 799
Illinois Association of Club Women
Junior Achievement of Mississippi Valley Inc.
Mascoutah Tuesday Women's Club
Pepsi-Cola Alton Bottling Company Grant
Progressive Women's Club of Madison, Illinois
Sigma Gamma Rho Sorority Grant
St. Joseph League of Cahokia Student Fund
The C. M. Gooch Foundation
The James Massa Grant
Wood River Woman's Club Scholarship

STUDENT LOAN FUNDS

CARBONDALE CAMPUS

Altrusa Club Student Loan Fund
American Home Department of Herrin Women's Club Student Loan Fund
Benton Student Loan Fund
C. A. Robertson Memorial Loan Fund (Southern Illinois University Foundation)
Carbondale Branch AAUW Loan Fund
Carbondale Business and Professional Women's Club Loan Fund
Carbondale Rotary Club Student Loan Fund
Class of 1939 Student Loan Fund
Cox Memorial Loan Fund
David E. Harwood Memorial Student Loan Fund
Delta Theta Tau Student Loan Fund
25th District Illinois Federation of Women's Clubs Student Loan Fund
Douglas Lawson Memorial Loan Fund
Dowdell Residence Halls Alumnae Loan Fund

E. G. Lentz Memorial Student Loan Fund
General University and Men's Residence Halls Emergency Loan Fund
Harrisburg Women's Club Student Loan Fund
Harwood Hall Student Loan Fund
Helen A. Shuman Memorial Fund (Southern Illinois University Foundation)
Henry Strong Educational Foundation Loan Fund
Householder's Loan Fund
Illinois Congress of Parents and Teachers Loan Fund
Illinois Health Improvement Association Loan Fund
Interfraternity Council Student Loan Fund
James L. Feezor Athletic Student Loan Fund
Jane Holloway Loan Fund
June Vick Memorial Loan Fund
Kappa Chapter-Professional Bookmen of America Memorial Loan Fund (Southern Illinois University Foundation)
Letitia Walsh Loan Fund (Southern Illinois University Foundation)
Lionel Picheny Memorial Loan Fund
Lucy K. Woody Student Loan Fund (Southern Illinois University Foundation)
Malvine Beck Educational Student Loan Fund
Marion Business and Professional Women's Clubs Loan Fund
Mary M. Steagall Memorial Student Loan Fund (Southern Illinois University Foundation)
Men's Residence Halls Loan Fund
Pape Lukk Memorial Student Loan Fund (Southern Illinois University Foundation)
Pearle Sherman Student Loan Fund (Southern Illinois University Foundation)
Printing Service Loan Fund
Robert R. McCormick Graduate Student Loan Fund
Rosiclare Women's Club Student Loan Fund
Senior Class of 1962 Loan Fund
Shelby S. Shake Memorial Loan Fund
Southern Illinois University Alumni Association Student Loan Fund
Southern Illinois University Women's Club Loan Fund
The Stillman J. Stanard Memorial Student Loan Fund
The Thomas Clifford and Lora Alice Davis Memorial Fund (Southern Illinois University Foundation)
Tracey L. Bryant Memorial Loan Fund (Southern Illinois University Foundation)
VTI Cooperative Retailing Loan Fund
William and Mary Gersbacher Student Loan Fund (Southern Illinois University Foundation)
William McAndrew Memorial Student Loan Fund (Southern Illinois University Foundation)
W. O. Brown Student Loan Fund

EDWARDSVILLE CAMPUS

Alumni Loan Fund
General Student Loan Fund
Sav-Mart College Student Program
Sue McLaughlin Loan Fund
United Student Aid Fund Loans
Virgil L. Seymour Memorial Fund



SOUTHERN ILLINOIS UNIVERSITY FOUNDATION

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*Undergraduate
Catalog
1965-1967*



**Southern Illinois
University Bulletin**

OBJECTIVES OF SOUTHERN ILLINOIS UNIVERSITY

TO EXALT BEAUTY

*In God,
in nature, and
in art;
Teaching how to love the best
but to keep the human touch;*

TO ADVANCE LEARNING

*In all lines of truth
wherever they may lead,
Showing how to think
rather than what to think,
Assisting the powers
of the mind
In their self-development;*

TO FORWARD IDEAS AND IDEALS

*In our democracy,
Inspiring respect for others
as for ourselves,
Ever promoting freedom
with responsibility;*

TO BECOME A CENTER OF ORDER AND LIGHT

*That knowledge may lead
to understanding
And understanding
to wisdom.*

*Undergraduate
Catalog
1965-1967*



Southern Illinois University Bulletin

SOUTHERN ILLINOIS UNIVERSITY BULLETIN
VOLUME 7, NUMBER 10 OCTOBER, 1965
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This Issue.....

of the *Southern Illinois University Bulletin* covers in detail questions concerning the undergraduate program and applies to both the Carbondale Campus and the Edwardsville Campus. It supersedes the special bulletins of the various educational units.

THE FOLLOWING issues of the *Southern Illinois University Bulletin* may be obtained free from Central Publications, Southern Illinois University, Carbondale, Illinois 62903.

Schedule of Classes. Please specify *quarter* (fall, winter, spring, or summer) and *campus* (Carbondale or Edwardsville).

Graduate Catalog.

Division of Technical and Adult Education.

Financial Assistance.

Undergraduate Catalog. The catalog will be available (by October, 1965) for examination in high school guidance offices and libraries throughout Illinois and in some other states. Copies will be furnished free to educational institutions upon request and to new students upon matriculation. The catalog may be purchased at the University Bookstore for \$1; mail orders should be sent to Central Publications and must include remittance payable to Southern Illinois University.

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University Calendar



<i>FALL, 1965</i>	New Student Week	Sunday–Tuesday, September 19–21
	Quarter Begins	Wednesday, September 22
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 24–29
	Quarter Ends	Saturday, December 18
<i>WINTER, 1966</i>	Quarter Begins	Monday, January 3
	Quarter Ends	Saturday, March 19
<i>SPRING, 1966</i>	Quarter Begins	Wednesday, March 23
	Memorial Day Holiday	Monday, May 30
	Quarter Ends	Wednesday, June 8
	Commencement (Edwardsville)	Thursday, June 9
	Commencement (Carbondale)	Friday, June 10
<i>SUMMER, 1966</i>	Quarter Begins	Monday, June 13
	Independence Day Holiday	Monday, July 4
	Quarter Ends	Saturday, August 27
	Commencement (Carbondale)	Saturday, August 27
	Commencement (Edwardsville)	Sunday, August 28
<i>FALL, 1966</i>	New Student Week	Sunday–Tuesday, September 18–20
	Quarter Begins	Wednesday, September 21
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 23–28
	Quarter Ends	Saturday, December 17
<i>WINTER, 1967</i>	Quarter Begins	Monday, January 2
	Quarter Ends	Saturday, March 18
<i>SPRING, 1967</i>	Quarter Begins	Wednesday, March 22
	Memorial Day Holiday	Tuesday, May 30
	Quarter Ends	Wednesday, June 7
	Commencement (Carbondale)	Thursday, June 8
	Commencement (Edwardsville)	Friday, June 9

CLASSES BEGIN on the second day of the quarter, except that the evening classes (5:45 P.M. or later) on the Carbondale Campus begin on the first night of the quarter.



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: Board of Trustees and
: Officers of Instruction
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BOARD OF TRUSTEES

Term expires

Kenneth L. Davis, <i>Chairman</i> , Harrisburg	1969
Melvin C. Lockard, <i>Secretary</i> , Mattoon	1971
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The University

1

SOUTHERN ILLINOIS UNIVERSITY is a multi-purpose and diversified university that, since its establishment in 1869, has sought to meet the educational needs of the times for the people which it serves as a public institution. It is fully accredited by the North Central Association of Colleges and Secondary Schools.

Though the student population has increased manifold from its beginning, the formation of schools, colleges, divisions, and departments within the University enables the institution to concentrate on the special interests of its individual students. The University in total size now ranks twenty-first in the nation. It offers facilities and faculty to give general and professional training to students ranging from two-year programs leading to associate degrees to the doctoral degree level.

Because of the growing demand for educational opportunities in the Madison-St. Clair counties area, the University established the Alton Residence Center and the East St. Louis Residence Center in 1957, the former on the campus of what used to be Shurtleff College, the latter in a senior high school building.

During the year 1958-59, communities in Madison and St. Clair counties launched a drive that helped acquire a large central campus site on the outskirts of Edwardsville, Illinois, approximately twenty miles east of St. Louis, Missouri. From what was once farm land is now rising a complex of uniquely designed buildings which constitute the Edwardsville campus.

Thus, though Southern Illinois University is a single university, it has several campuses with the major designations being the Carbondale Campus, with its Vocational-Technical Institute and Little Grassy Lake installation, and the Edwardsville Campus, the latter including the East St. Louis Center, the Alton Center, and the Edwardsville campus itself.

LOCATION

In all, Southern Illinois University has courses of study in operation at Carbondale; at Southern Acres (the Vocational-Technical Institute), ten miles east of Carbondale; at Little Grassy Lake, ten miles southeast of Carbondale, where recreation and outdoor education and other classes and workshops are held; and in the Madison-St. Clair counties area at East St. Louis, Alton, and Edwardsville.

CARBONDALE CAMPUS

The city of Carbondale (population 18,000) is in southern Illinois, 100 miles southeast of St. Louis, Missouri, in Jackson County, whose western border is the eastern bank of the Mississippi River. The region immediately surround-

ing Carbondale is noted for its large peach and apple orchards. Within ten miles of the campus there are two state parks and four lakes. The largest of the lakes is Crab Orchard Lake, four miles east of Carbondale. It has a shoreline of 125 miles and is frequented by students for swimming, water skiing, motor boating, sail boating, fishing, picnicking, camping, and hunting. Within the confines of the Carbondale campus itself is the University's own Lake-on-the-Campus with facilities for swimming, boating, fishing, and picnicking. Immediately south of Carbondale begins some of the ruggedest, most picturesque terrain in the state of Illinois.

Sixty miles north of Carbondale is the population center of the United States, while sixty miles south is the colorful and historic confluence of the Ohio and Mississippi rivers, the two, forming the border of the southern tip of Little Egypt, the fourteen southernmost counties in Illinois.

The campus is undergoing extensive expansion. In addition to approximately seventy large permanent buildings and several hundred small temporary buildings, the following have recently been completed or are in varying stages of completion or planning: the arena (seating capacity of 11,000 under a 300-ft. diameter dome), general classroom buildings, communications building, School of Technology complex of buildings, the University Park Residence Halls group (nine four-story residence halls and a seventeen-story residence hall, with complete dining facilities in adjacent dining commons), a physical science building, and a forestry research building.

Southern Acres, in the former administration area of the Illinois Ordnance Plant, contains the educational facilities of the Division of Technical and Adult Education, some apartments for married students, and some residence halls for single students.

The Little Grassy Lake facility consists of nine square miles of land adjacent to Little Grassy Lake and approximately seventy permanent structures. Although the programs conducted at Little Grassy are primarily devoted to instruction and training in recreation and outdoor education, many units of the University utilize its facilities in various ways.

EDWARDSVILLE CAMPUS

The general administrative offices for the Edwardsville Campus are located on the central campus, which is comprised of 2,600 acres of rolling farm land and wooded valleys along the bluffs flanking the Mississippi River southwest of Edwardsville, Illinois.

The master plan for the Edwardsville site provides facilities for a daily *commuting* student body of 18,000.

Present buildings finished or under construction in the first phase are the library, general classroom building, communications building, science building, administration building, and a university center building.

Initially parking space for 3,000 cars will be provided and ultimately space for 12,000 cars.

The facilities of the former Shurtleff College have been leased by the University for the operation of the Alton Center. Eight permanent buildings form the nucleus of this 40-acre campus. Nine additional buildings have been prepared on a temporary basis to meet the needs of current expansion.

The East St. Louis Center is located on Ohio Street at Ninth and Tenth. Laboratories, classrooms, libraries, and other facilities of a former senior high school have been redesigned and equipped to provide for a comprehensive undergraduate and graduate program at this campus. Several nearby residences have been leased for faculty offices.

THE UNIVERSITY LIBRARIES

The university libraries contain some 800,000 volumes (including bound government documents, bound periodicals, and books) and 7,000 current periodicals, plus collections of textbooks, newspapers, maps, films, framed art works, and phonograph records. With the exception of volumes in the Rare Book Room, all books are arranged on open shelves available for browsing.

Recognizing the importance of good libraries in a college education, the University has given special attention to both quantity and quality of library development. Some 90,000 volumes were added to the library during the past year, placing Southern Illinois University fourteenth in growth among the nation's university libraries. The libraries are open long hours for the convenience of students, and comfortable chairs, individual study tables, and a quiet atmosphere encourages both study and recreational reading. Reference librarians throughout the campus libraries are available to assist students in locating materials. A handbook on library use is available free to all students and those desiring further instruction may enroll in a course on library research methods.

Morris Library in Carbondale houses four subject libraries (Education, Humanities, Science, and Social Studies), an Audio Visual Department, and a Textbook Rental Service. Microtext reading equipment is available in each subject library; hi-fidelity phonograph listening equipment is provided in the Humanities Library. A central card catalog of the entire collection is located on the first floor; books may be borrowed for home use from a central circulation desk on the first floor, using an automated charging system. An inexpensive photocopying service is available to students at the circulation desk.

Special libraries are also provided for the University Laboratory School, Carbondale; for the Vocational Technical Institute, near Carbondale; and for Little Grassy Lake Camp.

The newly constructed Elijah P. Lovejoy Library serves the Edwardsville Campus with four subject libraries (Education, Humanities, Science, and Social Science). An Audio Visual Department and a Textbook Service are also housed in Lovejoy Library. A central card catalog and central circulation service are provided on the main floor.

Selected collections of reference books and assigned readings are available in the Alton and East St. Louis centers.

Admission, Advisement, and Registration

2

IN ORDER TO attend classes at Southern Illinois University, one must gain official admission to the University and must complete the registration process, which includes specialized testing, advisement, sectioning, and payment of fees.

ADMISSION

Applications for admission to the University are accepted any time during the calendar year but should be initiated in ample time to permit the necessary work of processing to be completed.

ADMISSION OF FRESHMAN STUDENTS

To be eligible for admission, a person must be either a graduate of a recognized high school (graduates of non-recognized high schools may be admitted by the Director of Admissions by examination), or must have passed the General Educational Development Test. A person seeking admission through the latter procedure will be considered only after his high school class would have graduated.

In-state high school graduates who rank in the upper two-thirds of their graduating class will be permitted to enter any quarter, while those who rank in the lower one-third of their graduating class will be permitted to enter, on academic probation, for the summer, winter, or spring quarter only. Exceptions to this rule may be made for lower one-third students who desire to enter in the fall who show high scores on the University entrance examinations. Such admissions will be on an academic probation basis.

Out-of-state high school graduates who rank in the upper forty per cent of their graduating class will be permitted to enter any quarter, while those in the lower sixty per cent of their graduating class will be permitted to enter, on academic probation, during the summer quarter provided that they show high scores on the University entrance examinations.

Both in-state and out-of-state lower-ranking students who elect to enter during the summer quarter can qualify for fall quarter attendance by carrying a minimum academic load of eight quarter hours and completing them with at least a *C* average.

Students who rank in the upper quarter of their high school graduating class will be considered for admission after completion of the sixth semester. Upper quarter students who seek admission after the sixth semester must furnish University entrance examination scores prior to their first registration. All other students must furnish examination scores prior to their being admitted to the University.

All admissions granted students while in high school are subject to the

completion of high school work and maintenance of rank upon which the admission was made.

A student entering the University as a Freshman is enrolled in General Studies (except one entering the Vocational-Technical Institute).

ADMISSION OF TRANSFER STUDENTS

Students applying as undergraduate transfer students with a 3.00 grade point average are eligible for unconditional admission in any quarter. Students who do not have a 3.00 grade point average and who are in good academic standing at the school of last attendance will be considered for admission for summer, winter, and spring. Students who do not have a 3.00 grade point average and who are not in good academic standing at the school of last attendance will be considered for admission for summer or spring provided there has been an interruption of schooling of at least one quarter's duration and there is tangible evidence to indicate that additional education can be successfully undertaken by the student.

Transfer students suspended for any reason other than academic failure must be cleared by the Student Affairs Division before admission will be granted by the Director of Admissions.

Transfer students with fewer than 64 quarter hours will be enrolled in General Studies as will those transfer students with more than 64 quarter hours whose educational goals are not yet determined.

ADMISSION OF FOREIGN STUDENTS

Each foreign student must submit, in addition to the regular admission papers, a questionnaire for foreign students showing all previous schooling. The foreign student must also submit an official statement showing sufficient proficiency in English to do successful college work. Such a student should make adequate provision for his financial needs; the University does not assume responsibility for a student who arrives with inadequate financial resources.

ADMISSION OF FORMER STUDENTS

A former student of Southern Illinois University not in attendance on a campus at the close of the quarter preceding application for admission must apply to the Admissions Office for re-entrance prior to registration.

A former student who is not in good standing must clear his status before the Admissions Office will prepare his registration permit. It is advisable for such a student to initiate re-entrance clearance early so that all inquiries may be answered and so that the applicant can find time to complete any requirements that may be imposed upon him.

ADVISEMENT

After a student has been admitted to Southern Illinois University he should talk with an adviser about his educational plans and complete his registration for the quarter he expects to enter the University.

To insure that an undergraduate student is properly advised concern-

ing the choice of a course of study which will fulfill the requirements of the University and prepare him for his chosen career, academic advisement has been made the special responsibility of a selected group from the teaching faculty. During his first two years the student will receive prime advice from an adviser responsible to the executive officer for General Studies. If he chooses to declare a special field of interest then, his General Studies adviser will refer him to someone representing his special field of interest for secondary advice; but formal admission to a specific field will be deferred until the student completes 64 hours of General Studies credit. All students in General Studies must initiate transfer into their chosen unit before enrolling again, after completion of 96 hours of credit.

The student is expected in his second year to take the Sophomore Testing Program, and in the quarter he expects to graduate to take the Graduate Record Examination. Students will be notified of the times and places of the examinations.

After admission to some special field, he will receive prime advice from a representative of that field.

REGISTRATION

At Southern Illinois University, a system of advance registration is in operation. The period of time from the third through the tenth week of each quarter is used for advisement and registration for the following quarter. For example, a student who plans to attend during the winter quarter may register between the third and tenth week, inclusive, of the fall quarter. A new student may also register on the opening day of each quarter. All students are urged to take advantage of the advance registration period.

Registration for any session of the University is contingent upon being eligible for registration. Thus, a registration including the payment of tuition and fees may be considered invalid if the student is declared to be ineligible to register due to scholastic reasons. The same situation may exist due to financial or disciplinary reasons if certified to the Registrar by the director of the Student Affairs Division.

Detailed information about the dates and procedures for advisement and registration appears in the Schedule of Classes, available from Central Publications.

ACADEMIC LOAD

The normal class load for a student is 16 hours. A maximum is 18 hours.

A student with a 4.25 average or above for the preceding quarter may be allowed by the head of his academic unit to take as many as twenty-one hours. In no case may a student carry, or be credited with, more than twenty-one hours in any quarter. A student on probation may not take more than fourteen hours. To be a full-time student one must carry twelve or more hours per quarter.

A student may not register for more than eight quarter hours if he is employed full-time.

For Selective Service purposes an undergraduate student needs to

carry 12 quarter hours to be considered full-time. Eight hours are so considered on the graduate level unless the student has a university appointment which requires his course load to be reduced below that level.

UNIT OF CREDIT

One quarter hour of credit represents the work done by a student in a lecture course attended one hour per week for one regular quarter, and, in case of laboratory and activity courses, the stated additional time. One quarter hour of credit is equivalent to two-thirds of a semester hour. Unless otherwise specified, one hour of credit means one quarter hour.

CLASS STANDING

An undergraduate student is classified as a freshman, sophomore, junior, or senior, depending upon the number of hours he has successfully completed toward the degree. A freshman is a student who has completed fewer than 48 hours; a sophomore, from 48 through 95; a junior, from 96 through 143; and a senior, 144 or more.

GRADING SYSTEM

Grades are expressed in letters as follows:

	GRADE POINTS (PER QUARTER HOUR)
A, Excellent	5
B, Good	4
C, Satisfactory (this is intended to be the average grade)	3
D, Poor, but passing	2
E, Failure; all work completed including final examination, but failed	1
W, Course not completed; includes incomplete records of all kinds (except "deferred" for graduate students)	0-5

The number of weeks the student has attended is indicated by a numeral; if he attended more than four weeks, this is to be followed by the grade he was making at the time of the withdrawal. For example: W8B.

DEF or DF, Deferred grade; work not complete. Given only for graduate students engaged in individual type work such as research, readings, thesis.

AU, Course taken on audit basis. No grade or credit hours earned.

CR, Credit. No letter grade assigned.

A grade given at the end of a course is final and may not be raised by additional work.

Any student who withdraws from a class without following the pre-

scribed procedure will receive a grade of *WE* in the course regardless of when the withdrawal occurs. A withdrawal from a course is initiated with the student's academic adviser.

Courses from which the student has withdrawn after the first four weeks will be recorded as *W* and must carry a grade. (Withdrawals after the first six weeks of a sixteen-week extension course must carry grades.) Exceptions to this rule may be permitted for unusual circumstances, but only with written approval of the student's academic dean.

Any change of grade, as upon the completion of *W*, must be reported within a year after the close of the quarter in which the course was taken. A student who for some reason must miss the final examination may not take an examination before the one scheduled for the class. In this case, *W12*, along with the grade earned at the time, is recorded by the instructor. The final examination may be taken at a later date, within one year. A complete record of all changes in grades will appear on the official transcript.

A student may register for courses in an "audit" status. He receives no letter grade and no credit for such courses. An auditor's registration card must be marked accordingly. He pays the same fees as though he were registering for credit. He is expected to attend regularly and is to determine from the instructor the amount of work expected of him. If an auditing student does not attend regularly, the instructor may determine that the student should not have the audited course placed on his record card maintained in the Registrar's Office. A student registering for a course for credit may not later change to an audit status or vice versa except for fully justified reasons. Such a change will ordinarily require the student's academic dean's approval.

The official record of a student's academic work is maintained in the Registrar's Office.

SCHOLASTIC PROBATION

To ensure that a student makes satisfactory progress toward his educational objective he is required to maintain both a 3.000 average on a quarter to quarter basis and a progressively improving grade point average as he accumulates specified numbers of hours to his record. Otherwise, he will be placed in categories other than Good Standing and may be required to discontinue attendance at the University for a period of time.

A student who is in Good Standing will be placed on Scholastic Warning at the end of a quarter in which he fails to make a 3.000 average provided he has calculated hours and an accumulative grade point average as follows:

Fewer than 96 calculated hours and less than a 3.000 average

96 but fewer than 144 calculated hours and less than a 3.100 average

144 or more calculated hours and less than 3.150 average

He is returned to Good Standing at the end of a quarter in which he makes a 3.000 or better average while on Scholastic Warning.

When a student on Scholastic Warning fails to make a 3.000 average for a quarter he is placed on Scholastic Probation and may be subject to suspension from the University for scholastic reasons at the end of a quarter

in which he fails to earn a 3.000 average while on Scholastic Probation.

A transfer student is subject to the above averages as applied to his academic record at this University and to his over-all academic record.

To ensure that a student is making progress toward the 3.000 average required for graduation he must maintain a progressively improving accumulative grade point average. At the end of each spring quarter a student who has accumulated the number of calculated hours listed below must also have obtained the corresponding accumulative grade point average:

<i>Quarter hours</i>	<i>Required average</i>
48– 95.5	2.400
96–119.5	2.700
120–143.5	2.800
144–159.5	2.900
160–	2.950

Otherwise he will be suspended from the University for scholastic reasons. He may seek reinstatement after a minimum of two quarters interruption but must furnish tangible evidence that additional education can be successfully undertaken.

A transfer student is subject to the above accumulative grade point averages as applied to his academic record at this University and to his over-all academic record.

H O N O R S D A Y

In recognition of high scholarship, an Honors Day convocation is held each spring. A candidate for a bachelor's degree in June or August who has maintained a grade-point average of 4.25 or more for all of his work through the winter quarter of his senior year receives special honor. Each junior having a 4.25 grade-point average and each sophomore and freshman having a 4.50 grade-point average is also honored at the convocation. Except in the case of a graduating senior, a student must be attending full time to be eligible. A transfer student must have earned the average indicated for work at Southern Illinois University only, as well as for the total record. Graduating seniors are also recognized at commencement on the graduation program, and their diplomas designate honors granted on the basis of Highest Honors (4.90 or higher) ; High Honors (4.75–4.89) ; and Honors (4.50–4.74).

C R E D I T F O R M I L I T A R Y E X P E R I E N C E

Students who have served one year or more of active duty and who have received an honorable discharge may receive up to six hours of aerospace credit at Carbondale; service of six months to one year may result in three hours of freshman aerospace credit; less than six months of active service does not allow any college credit. Credit so obtained does not satisfy any of the General Studies requirements. No credit is allowed for military service on the Edwardsville Campus.

Credit will be accepted for USAF courses within the limitations enforced for extension and correspondence work. No credit is allowed for college-level G.E.D. tests. In evaluating credit possibilities based upon formal

service school training programs, the recommendations of the American Council on Education as set forth in the Guide to the Evaluation of Educational Experiences in the Armed Forces are followed.

In order to receive credit for military service a veteran must present a copy of his discharge or separation papers to the Registrar's Office.

EXTENSION AND CORRESPONDENCE

A maximum of one-half of the number of hours required for the bachelor's degree, or ninety-six hours, may be taken by extension and correspondence courses combined. Of this total, not more than forty-eight hours may be taken in correspondence courses.

While Southern Illinois University does not maintain a correspondence division, courses taken by correspondence from institutions which are accredited by their appropriate regional accreditation association.

General Studies

3

THE GENERAL STUDIES PROGRAM at Southern Illinois University has been structured to build in a relevance and continuity of subject matter. Progressive three-quarter sequences (three hours per quarter) have been designed. First-level or freshman courses are planned sequences, with the second quarter's work based upon the first and the third quarter's work based upon the second. Second-level courses are normally completed during the sophomore and junior years. Third-level courses are offered to juniors and seniors. The new courses are not self-contained isolated units. The result is that a sense of unity is given to the whole program.

ACCELERATION AND PLACEMENT

There are three ways in which partial requirements of the General Studies program may be met without taking the courses specifically designed to meet those requirements. They are waivers, advanced-standing assignments, and proficiency examinations.

Depending upon their preparation in a particular subject, students may be placed in different sections of a particular course or in different sequences.

All students enrolled in the General Studies program are urged to consult their advisers at the earliest possible moment concerning the procedures for accelerating their courses of study.

WAIVERS

Each student is entitled to waive (i.e., omit entirely) the first-level sequence in the area (*A*, *B*, or *C* only) in which he will concentrate his work and to begin his work in that area at the second level. This is inadvisable, however, for some students; and the department or division involved may require the student to take first-level sequences. Of course the student who has not chosen a field of concentration cannot waive a first-level sequence.

ADMISSION WITH ADVANCED STANDING

More commonly, advanced standing will be achieved on the basis of A.C.T. scores and the high school record, or through passing a special advanced-standing examination (not the proficiency exam). When a student qualifies for and requests advanced standing in a course he will not ordinarily be permitted to later enroll in that course for credit. For example, one who qualifies for advanced standing in GSD 114 will not take GSD 114 for credit.

A student who gains exemption from certain courses by advanced

standing may (1) take advanced work in that area if more work is required by the General Studies program, (2) discontinue any further work in that area if it is not required by the General Studies program, (3) take advanced work in that area to satisfy the requirements of a particular course of study, or (4) take additional courses in that area as electives.

Advanced standing for the General Studies program should not be confused with the High School Advanced Placement Program of the College Entrance Examination Board. Information on the Advanced Placement Program appears in Chapter 5.

PROFICIENCY EXAMINATIONS

The rules covering the General Studies proficiency examinations are similar to those governing other proficiency examinations at the University.

Upon passing a proficiency examination in a course with a credit of "passing," a student will be granted regular credit toward graduation or toward any other legitimate objective. His record will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination"; however, this credit will be neutral in the calculation of grade point average. If a student fails a proficiency examination, his record will show nothing, but the report will be appropriately filed.

Information concerning proficiency examinations may be secured from the Registrar's Office, Carbondale, or from the Office of Academic Advisement, Edwardsville.

OUTLINE OF GENERAL STUDIES REQUIREMENTS

<i>Area A: Man's Physical Environment & Biological Inheritance</i>	.....	24 hrs.
A first-level basic sequence	(GSA-1)	9 hrs.
A second-level continuation sequence	(GSA-2)	9 hrs.
Third-level advanced courses	(GSA-3)	6 hrs.
<i>Area B: Man's Social Inheritance & Social Responsibilities</i>	.....	24 hrs.
A first-level basic sequence	(GSB-1)	9 hrs.
A second-level continuation sequence	(GSB-2)	9 hrs.
Third-level advanced courses	(GSB-3)	6 hrs.
<i>Area C: Man's Insights & Appreciations</i>	.....	24 hrs.
A first-level basic sequence	(GSC-1)	9 hrs.
A second-level continuation sequence	(GSC-2)	9 hrs.
Third-level advanced courses	(GSC-3)	6 hrs.
<i>Area D: Organization & Communication of Ideas</i>	.....	18 hrs.
Required college composition and speech	(GSD-1)	9 hrs.
Either a foreign language sequence or a basic mathematics sequence	(GSD Math or FL)	9 hrs.
<i>Area E: Health & Physical Development</i>	.....	6 hrs.
First-level required physical education	(GSE PE)	3 hrs.
Second-level required health education	(GSE-2)	3 hrs.
<i>Total</i>	.....	96 hrs.
If a first-level sequence is waived, the total is only 87 hours.		

SPECIFIC REQUIREMENTS—CARBONDALE

FRESHMAN LEVEL		39-48 HOURS
GSA-1	101-9 (phys, chem, chem) lab is optional	9
GSB-1	101-9 (hist, hist, geog)	9
GSC-1	110-9 (western humanities); OR 103-3 (mus) or 101-3 (art), 102-3 (phil), 103-3 (lit)	9
GSD-1	101-6 (Eng comp), 103-3 (spch)	9
GSD Math or FL	108-9 (Math); OR 108-6, 110-3 (bus, econ, ag econ students only); OR 114-9 (col alg & trig); OR a 9-hour course in a foreign language	
GSE PE (men)	101a (swim) or 102; plus 2 hours excluding 101a, 102;	
(women)	OR 111a (swim) or 112 or 113d, plus 2 hours excluding 111a, 112, 113d; BUT each student who cannot pass a swimming test must take 101a or 111a, and not more than two hours in 101 and 103 or in 111 and 103 may apply toward the requirement.	3
FC	Attendance at freshman convocations for 3 quarters is required but is not part of the GS program.	
SOPHOMORE LEVEL		30 HOURS
GSA-2	201-9 (biol), or biol-6 and 200-3 (geol)	9
GSB-2	201-9 (anth, psyc, soc); OR 211-9 (econ, govt, econ-govt)	9
GSC-2	209-3 (modern lit) or 202-3 (poetry) or 203-3 (thea), and 200 (speech) or 204-3 (art) or 205-3 (des) or 206-3 (mus), and 207-3 (phil) or 208-3 (logic) or 201-3 (drama) or 210-3 (fiction); OR 211-9 (oriental humanities)	9
GSE-2	201-3 (health educ)	3
JUNIOR LEVEL		18 HOURS
GSA-3	Any two of the following, except not both 330 & 331: 301 (phil), 302 (psyc), 312, 313, 314, 315 (zool), 321 (geol), 330, 331 (geog), 340, 345 (bot), 358a,b (tech), 363a (phil)	6
GSB-3	Any two of the following: 300a, 300b, 300c ¹ , 301, 302, 303, 304 (govt), 311, 312, 313 (econ), 314 (ag-econ), 320 (soc, summer abroad), 321 (soc), 323 (hist), 325 (soc), 331 (educ), 333 (hist), 341 (soc), 343 (geog), 369 (hist), 385, 390, 392 (govt)	6

¹ Except 300c may not be taken separately for General Studies credit.

GSC-3	Any two of the following: 301 (Eng), 305 (Fr), 307 (govt), 310, 311, 312 (phil), 313 (Eng), 318 (Eng, summer abroad), 320 (Grk), 321 (Eng), 330 (Grk), 331 (Ltn), 335 (Eng), 340, 341, 342 (art), 345 (Eng), 348 (p & p), 365 (Eng), 363a (phil), 381, 382, 383, 386, 387 (phil)	6
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SPECIFIC REQUIREMENTS — EDWARDSVILLE

FRESHMAN LEVEL		39-48 HOURS
GSA-1	101-9 (phys, phys-chem, chem)	9
GSB-1	101-9 (geog, hist, hist)	9
GSC-1	151-3 (poetry), 152-3 (logic), 100-3 (mus) or 101-3 (art)	9
GSD-1	101-6 (Eng comp), 103-3 (spch)	9
GSD Math or FL	112-9 (math); OR 114-6 (col alg) 114c-3 (trig) or 114d-3 (stat); OR a 9-hour course in a foreign language	9
GSE PE (men)	101a (swim), 102, plus one hour excluding 101a, 102;	
(women)	OR 111a (swim), 112, plus one hour excluding 111a, 112; BUT a student who passes a swim test or for whom no swim facilities are provided must take 102 or 112 and 2 hours from 103, 104 or from 113, 114.	3
SOPHOMORE LEVEL		30 HOURS
GSA-2	201a-3 (biol), 201b-3 (biol), 201c-3 (biol), or 220-6 (earth science)	9
GSB-2	201-9 (anth, soc, psyc); OR 211-9 (econ, govt, govt-econ)	9
GSC-2	251-9 (lit-phil); OR 251a,b-6, and 203-3 (thea) or 200-3 (spch), or 255-3 (mus) or 251a,c-6 and 203-3 (thea) or 200-3 (spch), or 255-3 (mus)	9
GSE-2	201-3 (health educ)	3
JUNIOR LEVEL		18 HOURS
GSA-3	Any two of the following, except not both 330 & 331: 312 (conservation), 330, 331 (geog), 356 (astr), 358a,b, 361 (phys), 363a,b (phil,sci)	6
GSB-3	Any two of the following: 300a,b,c (hist), 311 (econ), 312 (econ), 331 (educ), 341 (soc), 345 (govt), 351a,b (geog-anth), 354 (econ-geog), 356 (econ), 359a,b (soc, govt), 382a,b (hist), 385 (govt)	6
GSC-3	Any two of the following: 335 (Eng lit), 351a,b,c (art), 354a,b (thea), 357a,b,c (mus), 360a,b (art, mus, lit), 363a,b (phil-sci)	6

Degrees 4

SOUTHERN ILLINOIS UNIVERSITY grants the following undergraduate degrees.

Associate in Arts	Bachelor of Science
Associate in Business	Bachelor of Music
Associate in Technology	Bachelor of Music Education
Bachelor of Arts	

FIELDS OF STUDY

Below are the fields of study in which Southern Illinois University grants bachelor's degrees to Carbondale Campus students (indicated by the letter *C* following the field) or Edwardsville Campus students (indicated by *E*) or both (no letter). A bachelor's degree normally requires four years of study.

Accounting		History	
Agriculture, General	C	Home Economics	C
Agricultural Industries	C	Industrial Education	C
American Studies	E	Industrial Sciences	C
Animal Industries	C	Industrial Technology	C
Anthropology	C	Inter-American Studies	C
Applied Science	C	Journalism	C
Art		Kindergarten-Primary	
Biological Sciences		Education	C
Botany		Language Arts	C
Business Teacher Education		Management	
Chemistry		Marketing	
Community Development	C	Mathematics	
Design	C	Microbiology	C
Economics		Music	
Elementary Education		Nursing	E
Engineering	C	Philosophy	
Engineering Technology	C	Photography	C
English		Physical Education for Men	
Foreign Languages		Physical Education for Women	
Forestry	C	Physics	
General Science	C	Physiology	C
Geography		Plant Industries	C
Geology	C	Printing Management	C
Government		Psychology	
Health and Physical Education	C	Public Administration and	
Health Education	C	Planning	E
Health Science	C	Radio-Television	C

Recreation and Outdoor Education	C	Special Education (Physically Handicapped)	C
Secretarial Studies		Speech	
Small Business Management	C	Speech Correction	
Social Studies	C	Theater	
Sociology		Vocational Agriculture	C
Special Education (Mentally Retarded)		Zoology	

GRADUATION

Every degree candidate *should* signify his intention to graduate by making application for graduation no later than the first week of his last quarter in attendance before the desired graduation date. Therefore, a person desiring to graduate in the June commencement should make application for graduation during the first week of the spring quarter. The application forms are available in the Registrar's Office.

Every candidate for a degree *must* file written application with the Registrar not less than five weeks before the date on which the degree is to be granted. At the time of application the student must pay his graduation fee and order his cap and gown through the University Store and register with the Placement Service. A student must have a 3.0 average before his application for a degree may be accepted.

In addition to the satisfying of all necessary academic requirements each candidate for a degree must make certain that he has no outstanding financial obligation with the University. Otherwise, his graduation clearance will be held up.

Students must attend Commencement exercises to receive their diplomas, unless in advance they obtain permission to be graduated *in absentia*.

ASSOCIATE DEGREE

Each candidate for an associate degree must complete a minimum of 96 hours of credit in approved courses. Each student must maintain a *C* average. The degree granting unit for the associate degree is the Division of Technical and Adult Education. For additional information concerning this degree, refer to the Division of Technical and Adult Education bulletin.

BACHELOR'S DEGREE

Every bachelor's degree candidate is expected to meet the University's general requirements and to follow the recommendations of his academic unit.

Each candidate for the degree must complete a minimum of 192 hours of credit in approved courses. At least 64 must be in senior (i.e., 300 or 400) college courses. Each student must have a *C* average, and grades not lower than *C* in subjects aggregating at least three-fourths of the work. A *C* average is required in the field of concentration. These averages are required for credit made at this University as well as for the total record. To receive

a bachelor's degree from Southern Illinois University a student must present either a total of three years work (144 hours) earned at Southern Illinois University or 48 senior college hours earned at the University, 16 of which may be earned in extension.

A student who receives his first bachelor's degree from Southern Illinois University and who desires a second bachelor's degree, must complete 45 hours in addition to those required for the first degree and must fulfill the requirements for the second degree. Of these 45 hours, a minimum of 15 must be taken in residence at the University, and a maximum of 15 may be acquired in extension and/or correspondence courses. At least 30 hours must be in senior college courses. If a student received his first bachelor's degree from another university, 48 hours are required to fulfill the residence requirement for the second bachelor's degree, two-thirds of which must be in senior college courses.

The state of Illinois requires that American patriotism and the principles of representative government, as enunciated in the American Declaration of Independence, the Constitution of the United States of America, and the Constitution of the State of Illinois, and the proper use and display of the American flag shall be taught in all public schools and other educational institutions which are maintained in whole or in part by public funds, and that no student shall receive a certificate of graduation without passing a satisfactory examination upon such subjects. Government 210, 231, 300, History 330, and certain courses in General Studies Area B offer such instruction.

Students preparing to teach must satisfy the certification requirements of the state in which they plan to teach. Illinois requirements are described on page 35 of this bulletin. Certification information may also be obtained from the Registrar's Office. Most students who plan to teach in the public schools register in the College of Education or in the Education Division.

BACHELOR OF ARTS DEGREE REQUIREMENTS, EDWARDSVILLE

In addition to the University's general requirements for a bachelor's degree, a person working toward a Bachelor of Arts degree must have the following:

1. A reading knowledge of a foreign language, ordinarily requiring 9 hours of university study or its equivalent.
2. A course in either philosophy or psychology (or a General Studies equivalent in those fields).
3. An area of concentration of at least 42 hours and a secondary concentration of at least 24 hours. Some areas of concentration require more than the minimum number of hours.

FRESHMAN CONVOCATIONS REQUIREMENT, CARBONDALE

All students entering the Carbondale Campus as beginning freshmen must satisfactorily complete three quarters of Freshman Convocation during their first year, or in any case prior to graduation. Exceptions are (1) students

who transfer from other institutions and re-entering students who started collegiate work in the Vocational-Technical Institute or on the Edwardsville Campus. (2) students who are more than twenty-five years of age at the time of first registration at Southern Illinois University, (3) students who carry fewer than 12 hours each quarter during their first eight quarters, and (4) students enrolled in the Vocational-Technical Institute.

ADVANCED DEGREES

For information concerning the master's degree or the Doctor of Philosophy degree, refer to the Graduate School catalog or direct inquiries to the Dean, Graduate School, Southern Illinois University, Carbondale, Illinois 62903.

Special Programs : 5 for Credit :

HONORS PROGRAM

Plan "A" has been created for the benefit of superior students who are interested in the objectives of general education as well as their own fields of specialization. Plan "A" is available at Carbondale only. It consists of one 3-hour course per quarter. The courses, entitled Honors Seminar, are numbered as follows: Plan "A" 151-12, 251-12, 351-9, 391-9.

A student may have credit for one course for one quarter only, or he may stay with Plan "A" for all twelve quarters and accumulate a total of 42 hours of credit. If he does not do satisfactory work, he may be asked to withdraw from the plan at the end of a quarter.

It is hoped that these courses will aid the students in integrating and evaluating their other courses. It is to be hoped also that through these courses they will become acquainted with the broad concepts and the great issues that play important parts in our society. Some quarters will also be planned to give the students an intensive study of the entire culture of a century; for examples, the fifth century B.C., or the fourteenth century A.D.

Plan "A" House is open for study purposes for its students all day every day except Saturday and Sunday.

INDIVIDUAL HONORS WORK

Individual Honors Work is distinguished from Plan "A" by its stress on research and independent study during the junior and senior years. Department chairmen or division heads may compile lists of students eligible, or through conferences they may encourage some students to do honors work.

If a Carbondale or Edwardsville student is accepted by his department or division for honors work, the chairman of that unit will appoint an adviser and two other staff members to form the student's committee. The student's committee shall approve his proposals for independent study and specific requirements in completing his course of study. He may then elect to take not fewer than 9 nor more than 21 hours toward his concentration in independent research and investigation. He will take a comprehensive examination, either oral or written, at the end of his junior year, and again at the end of his senior year if he elects to do a second year of honors work.

Grades may be deferred at the end of the first and second quarters but not from one school year to the next.

The Honors Work Program Committee (Carbondale) or the Honors Program and Superior Student Committee (Edwardsville) does not function directly in the student's course of study but offers its services in a standby capacity.

PROFICIENCY EXAMINATIONS

The University recognizes the importance of providing adequate encouragement for academically talented students. Thus, such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Applications are made at the Registrar's Office.

The following general rules govern the proficiency examinations for undergraduate credit.

1. Any student who feels qualified to take a proficiency examination is eligible to do so; students scoring in the top ten percent of A.C.T. are particularly encouraged to avail themselves of this opportunity.

2. Credit not to exceed 48 hours, including credit through the College Entrance Examination Board, Advanced Placement Program, may be earned through proficiency examinations. Credit will be nonresident.

3. Upon passing a proficiency examination in a course with a credit of "passing," a student will be granted regular credit toward graduation or toward any other legitimate objective. His record will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination"; however, this credit will be neutral in the calculation of grade point average. If a student fails a proficiency examination, his record will show nothing, but the report will be appropriately filed.

4. A student may not take a proficiency examination for the same course more than one time. Neither may he take a proficiency examination in a course in which he has previously received a grade.

5. No credit granted by proficiency examinations will be recorded until the student has earned at least 16 hours of credit of *C* grade or above in residence at Southern Illinois University.

6. A student applying to take a test for advanced standing only should initiate the request at an advisement office. No credit is recorded regardless of grade earned.

ADVANCED PLACEMENT PROGRAM

A high school student who is qualified through registration in an advanced placement course in his high school or through other special educational experience may apply for advanced placement and college credit through the Advanced Placement Program of the College Entrance Examination Board, 475 Riverside Drive, New York, New York 10027. To receive credit, a person must earn the grade of 3, 4, or 5. Any interested high school student should write to the University's Admissions Office to learn the current listing of courses for which credit may be earned through this program.

Ordinarily, the maximum credit granted through advanced placement examinations is 16 hours. It is nonresident credit, does not carry a grade, and is not used in computing the student's average grade. Credit granted at another accredited college or university under this plan is transferable to this University up to a maximum of 16 hours. A student may appeal to his academic dean to be granted more than 16 hours.

Student Services

6

SOUTHERN ILLINOIS UNIVERSITY is dedicated to helping each student make the most of the educational opportunities. In addition to the academic programs, the University provides several services to assist in creating the conditions and opportunities for reinforcing the intellectual, cultural, and artistic purposes of the institution.

The Vice-President for Student and Area Services is in charge of a variety of services to students.

STUDENT AFFAIRS DIVISION

The Dean of Students heads the Student Affairs Division which includes the following specific units on each of the major campuses: Student General Affairs, Student Activities, and Student Counseling and Testing.

STUDENT GENERAL AFFAIRS

This office is concerned with an integrated approach to student needs and problems in intellectual, social, spiritual, and physical areas. Students may learn about and be referred to specialized services throughout the University. It provides general information regarding Freshman Convocations, automobile registration, traffic and parking regulations, general rules and regulations including late leaves for women, military information, and Selective Service regulations. It also serves in an advisory capacity regarding special University resources for handicapped students.

STUDENT ACTIVITIES

Southern Illinois University encourages a broad program of student activities with opportunities for all students to participate. A number of organizations augment the student's educational experiences by assisting him in learning how to plan and how to carry out responsibilities, how to work with others, how to make wise use of leisure time, and how to develop leadership. These organizations are varied so that each student may find some group or activity which is of special interest to him.

The Student Activities Center assists all campus groups and individuals in planning, conducting, and evaluating their activities and programs. Special emphasis is placed on giving students opportunities to learn how they can best contribute to the well-being of others and to learn the importance of worth-while interpersonal relationships.

The University Student Council with representatives from each campus is responsible for proposing recommendations on policies and for reviewing recommendations submitted by students and student groups which affect the student body as a whole. The council serves as an advisory body to

the administration of the University and as a representative voice of the student body to national organizations and the general public.

Students assist in planning a wide variety of programs for the campus community. The University Center Student Programming Board at Carbondale and the University Center Board Program Council at Edwardsville are the major planning groups for general campus programs, many of which are scheduled in the University Center. The University Center provides a variety of services, facilities, and recreational opportunities for students.

Some of the special events scheduled during the year are New Student Orientation, Parents' Day, Homecoming, Season of Holidays, Variety Show, and Spring Festival.

STUDENT COUNSELING AND TESTING

The Student Counseling and Testing Center is staffed with professional counselors who are able to discuss freely any problem or plan that may concern the student, be it personal, academic, or vocational. Most of the students who seek help from the Counseling and Testing Center refer themselves. However, referrals are received from faculty and other agencies throughout the University. A student coming to the center for the first time is helped to understand the counseling process, and arrangements are made for a scheduled appointment. Students may also make appointments by telephone. Counseling is designed to help the student arrive at a realistic solution to his problem by providing a permissive setting in which he may express freely his thoughts and feelings and in turn gain insights for greater understanding.

The Student Counseling and Testing Center is approved by the Committee on Professional Practices of the American Personnel and Guidance Association. Services to the students are provided without charge. When special testing is needed to assist in counseling, it may be arranged through the center.

Close co-operation is maintained with the other functional areas of the Student Affairs Division, the Health Services Division, and the Student Special Services Division as well as related services throughout the University.

The Student Counseling and Testing Center on each campus has a file of selected pamphlets, monographs, and books cataloged to afford authentic information about vocational requirements, trends, and opportunities, including those in military service. A similar file is provided in the Education Library of Morris Library.

Southern Illinois University administers the tests for the American College Testing Program on both the Carbondale Campus and the Edwardsville Campus. In addition to the extensive individual testing completed in conjunction with counseling, the Student Counseling and Testing Center also administers testing programs for selection, placement, and research purposes.

An on-going program of research is carried out by the staff of the Counseling and Testing Center in areas of student attitudes, aptitude, achievement and background, the college environment, and related factors

to the total educational process. Staff members serve as consultants to aid other faculty members in the areas of educational and institutional research.

STUDENT SPECIAL SERVICES DIVISION

The Executive Director of Student Special Services coordinates those student services which also have a definite relation to the business or financial program of the University: Student Housing, Student Work Program, Student Financial Assistance.

STUDENT HOUSING

In the housing of students, the University is concerned with the establishment of a proper educational environment wherein the student might most readily achieve his scholastic goals. An attempt is made to develop and provide excellent food services, comfortable and attractive study and sleeping facilities, and adequate counseling and referral services. It is recognized that the living environment provides an opportunity to augment and supplement the formal tutorial process, and the University is experimenting with ways in which to fuse the living experiences and the classroom experiences of the student. Students are given the opportunity to accept the responsibility for self-government, and it is hoped that in so doing they shall be able to better learn the true functions of democratic institutions and will be more capable of assuming their role as citizens upon graduation.

Effective September 1, 1965, single undergraduate students not residing with their parents or guardians will be permitted to reside only in those accommodations which have been and which continue to be classified by the Administration as Accepted Living Centers. Any single undergraduate student who resides in accommodations not designated as Accepted Living Center shall be subject to disciplinary action. The qualifications necessary for a living unit to be classified as an Accepted Living Center shall encompass due consideration for safety, sanitation, health and recreation, supervision and the creation of an environment which is conducive to good study conditions, and in addition is limited to students of Southern Illinois University and available to all students of the University regardless of race, color, religion, or national origin.

UNIVERSITY HOUSING, *Carbondale Campus*

Applications for University Housing for students for any academic year may be filed after September 1 of the preceding year. Assignments of space and contracts for housing may be made on the basis of the date of original application for housing if the student has been admitted to the University.

Present nine-month rates for University Housing for a single student vary from \$795 to \$378 dependent on room and board in permanent residence halls to a room only in group housing. Women's cooperatives are \$186 per year. Family housing rates vary from \$95 to \$24 per month dependent on whether it is a one or two-bedroom apartment with utilities, a temporary unit, or trailer space with utilities.

The University is cognizant of the fact that the costs of board and room

constitute, most often, the major source of expenses in relation to the student's total education. Therefore, the rates charged by the University for the various housing units are established on the basis of current costs, and a sincere effort is made to maintain these costs at the lowest possible level. Nevertheless, all rates for University Housing are subject to change from time to time depending upon the prevailing cost structure and approval by the Board of Trustees.

UNIVERSITY HOUSING, *Edwardsville Campus*

The University has no on-campus housing for students on the Edwardsville Campus (with the exception of limited space for students enrolled in nursing).

OFF-CAMPUS HOUSING

In order for living accommodations to be classified as acceptable for student occupancy, such facilities must meet the minimal safety, sanitation, health, recreation, and supervisory standards as are outlined in the Off-Campus Housing Policies and Standards. The creation of an environment which is conducive to good study conditions shall always be of primary consideration.

If a single undergraduate student feels that unusual circumstances dictate that he should be granted an exception from these standards, he may petition the Housing Office for such a waiver. If a formal investigation indicates that an exception is justified, his petition may be approved by the Housing Office and he may then be permitted to live in such facilities. However, it shall be the student's responsibility to seek approval from the Housing Office.

The University vigorously encourages that all accommodations used by graduate students and married students shall meet these minimal standards. The Housing Office assists students in locating approved off-campus housing facilities. A trained staff is available to advise both single and married students who are seeking off-campus accommodations. Experience has indicated that attempting to obtain off-campus facilities by mail may not prove satisfactory. Thus, prospective students are urged to visit the campus and to personally seek assistance in locating desirable living accommodations.

Only a few off-campus housing facilities offer meals. Therefore, meals for those students residing off-campus must be obtained in cafeterias or restaurants on or off campus. Among the listings of off-campus facilities available in the Housing Office are those of organized houses which elect officers and carry on a program of group activities.

An off-campus room for nine months costs from \$216 to \$495 depending on size, distance from campus, number of roommates, number of privileges such as cooking, and other factors.

Students who wish to live away from their homes in approved off-campus facilities may obtain assistance and information concerning living facilities from the Housing Office at Carbondale or Edwardsville.

STUDENT WORK PROGRAM

The Student Work Program, operating on the Carbondale and Edwardsville

campuses, serves two major purposes: It provides financial assistance in the form of part-time employment; and it provides work experience which relates, if possible, to the student's academic program. Students employed on-campus are expected to participate in training programs. The kind of training and length of the programs are determined by the employing unit in co-operation with the Student Work Office.

The Student Work Office, which is the administrative office for the program, is a referral agency and cannot promise jobs to students. However, every effort is made to place capable, needy students in either on-campus or off-campus jobs.

Students employed on-campus are paid from \$1.00 to \$1.75 per hour, based upon off-campus experiences and the number of years of satisfactory service to the University. Employment by the University on a part-time basis provides financial assistance and work experience for some 2,000 students in the following job classifications:

1. Instructional research assistants assist in the instructional or laboratory work and in highly technical jobs.
2. Technical and supervisory workers are highly skilled, assume extra responsibility, and are able to work without close supervision.
3. Clerical workers work at semi-skilled and semi-technical jobs.
4. Service workers and maintenance workers work at semi-skilled and semi-technical jobs.
5. Special workers, such as students who have special skills and talents, work at jobs not included in the above classifications.
6. Extra workers perform jobs of short duration which are included in Classes 3 and 4.

The recommended maximum work load is 80 hours per month for students carrying 15 or more hours, 100 hours per month for those carrying 12 to 14 hours.

The Student Work Office sets the standards and reviews the qualifications of students to determine their eligibility to participate in the program. Therefore, it is the first office to be contacted by the students who desire part-time employment. High school seniors who have urgent financial problems should contact the Student Work Office in the spring before high school graduation. They should seriously consider enrolling in the University for the summer session in order to be in close contact with the Student Work Office for possible referral and placement. It is recommended that prospective students who expect to earn part of their expenses should have means of support for at least one quarter.

The Student Work Office also assists students in finding summer employment at resorts, in governmental agencies, in business and industry, on farms, and with canning and packing companies.

An application for student employment, or information about work possibilities, may be obtained by writing to the Student Work Office on the campus where work is desired.

STUDENT FINANCIAL ASSISTANCE

The financial assistance program at Southern Illinois University has been organized so that it may function as an integral part of the total educa-

tional experience of the student. Insofar as possible, an attempt is made not only to assist needy and deserving students with their financial obligations through the program but to contribute to their general development and learning experience.

The program of financial assistance includes scholarships, awards, prizes, grants-in-aid, and student loan funds. As a part of the award program, the Board of Trustees of the University has established tuition awards known as Southern Illinois University Scholarship and Activity Awards. To apply for awards, entering freshmen are required to have ranked in the upper half of their graduating class and to have achieved a minimum comprehensive high school average of *C*; enrolled students are required to have a minimum average of *C* for all college work. For scholarships available to upperclassmen, a minimum average of *C* is required for all college work; for some scholarships higher averages are required.

The comparative limitations of such forms of assistance in terms of both number and amount available make it inadvisable for an undergraduate student to expect to meet all university expenses from such sources. The family, including parents, friends, and relatives, is the primary resource for a student's college costs. The student himself normally supplies one-third to one-half of his finances through work during the summer or during school, and through his savings. The University assists in making up the difference between college costs and the student's resources through scholarships, awards, and loans.

Students desiring to apply for financial assistance must be officially admitted and should request an application for financial assistance from the Student Financial Assistance Center on the campus of their choice. In general, students should apply for assistance between January 1 and March 15 prior to the September when assistance is needed.

HEALTH SERVICES DIVISION

The University Physician heads the Health Services Division which provides services at all the major instructional centers of the University.

The primary purpose of the Health Service is to cultivate in students both physical and emotional health.

A physical examination, preferably performed by the family physician, is required of all students before attending classes in the University. A simplified form is furnished the student for this purpose; it should be mailed or brought in to the Health Service on completion. This becomes an important permanent part of the student's health record, to which is added information relative to the treatment of illnesses while the student is in school. From this record also, decisions may be made relative to special considerations for physical disabilities, a need for individualized physical-education courses, etc.

Detailed information about the service provided at each campus may be had through a brochure available at the Health Service on each campus. This includes information about the Student Medical Benefit Fund which helps to defray hospital costs.

OTHER STUDENT SERVICES

COOPERATIVE CLINICAL SERVICE

This is a coordinated center of services open to students as well as children, adolescents, and adults. Persons may report directly to the center or write the manager for an appointment. Services include psychodiagnostic assessments, speech and hearing evaluations, assistance with reading and study skills, personal counseling, marriage counseling, rehabilitation counseling, vocational counseling, speech and hearing therapy, and physical therapy. The cooperating agencies on the Carbondale Campus include Reading Center, Department of Guidance and Educational Psychology, Department of Psychology, Department of Special Education, Department of Speech Correction, Rehabilitation Institute, Department of Sociology, Student Counseling and Testing Center, and Health Service.

PLACEMENT SERVICE

The Placement Service is maintained for the benefit of students, graduates, and others who have attended the University, and who desire to find employment in the teaching field, in the professions, or in business. It also serves employers by helping them locate personnel.

The facilities of the Placement Service are free to candidates seeking positions, as well as to employers. Each degree candidate is requested to register with the Placement Service during the fall quarter of the senior year. This co-operation will aid the record-keeping function as well as the placement function of the office. Credentials are sent to prospective employers at the request of either the candidate or the employer.

The Placement Service is a member of the National Institutional Teacher Placement Association, the Illinois Institutional Teacher Placement Association, the Midwest College Placement Association, and the Association of School and College Placement.

Inquiries should be addressed to the Director, Placement Service, Southern Illinois University, on the appropriate campus.

INTERNATIONAL STUDENT SERVICES

This office assists students from other countries in obtaining and in solving problems related to their residence and study in this country. Special help is given in orientation, visa regulations, referral for special instruction in English, and financial problems. Arrangements are also made for students to speak before a variety of groups, to visit in American homes, and to take special trips to see items of interest.

BURSAR

This office accepts payment of tuition, fees, and room charges. It also distributes checks for student employment. Limited check cashing services are provided to students. Students are encouraged to establish checking accounts in the local banks of the area to obtain the full services of a regular checking account.

STUDENT REGULATIONS

GENERAL

The Student Guidebook which is distributed to new students during New Student Week or which may be obtained from Central Publications contains information concerning the expectancies of students of Southern Illinois University. It is an aid to their understanding of the opportunities that are afforded them and a guide to responsibilities that ensue.

AUTOMOBILES

Southern Illinois University has developed two campuses: a residential-type campus in Carbondale and a commuting campus in Edwardsville. In an effort to provide the best possible experiences in higher education for talented students regardless of financial needs, it has deemed that the use of unessential motor vehicles is not a necessary part of an education on a residential campus. Therefore, a student at the Carbondale Campus may not use, operate, or possess an automobile in the campus community unless he is a graduate student, married, a bona fide commuter, or a student with exceptional need.

Students attending the Edwardsville Campus may operate automobiles.

Students desiring information about motor vehicle regulations and registration procedures may inquire at the Student Affairs office on the appropriate campus.

RESIDENCE REGULATIONS

Regulations defining the residence of students for purposes of registration in Southern Illinois University are as follows:

1. Evidence showing the residence of every applicant for admission to the University must be submitted to the Registrar at the time of application for admission, and resident or nonresident fees shall be assessed on the basis of evidence appearing in the Registrar's records.

2. In all cases where the records indicate that the student's home is outside the state of Illinois, the nonresident fee shall be assessed. A student who takes exception to the ruling may file a claim for a refund, but this must be submitted to the Registrar within 10 days of the opening date of the quarter for which the charge was made.

3. In the case of a student who is a minor, the residence of the parent, or if the student has no parent, the guardian of this person, shall govern unless there is proven to have been complete emancipation of the minor from his parents or guardian and he has established residence in the state of Illinois.

4. Any student, adult or minor, whose parents have established a bona fide residence in the state of Illinois will be regarded as a resident for registration purposes; except that an adult student who has established a residence on his own account outside of the state must conform to the terms set forth in regulation 6 to be classified as a resident.

5. A wife is classified as a resident for registration purposes if her husband is a bona fide resident of the state of Illinois preceding and at the time of her registration.

6. An adult student, whose parents are deceased or whose parents reside outside the state, to be considered a resident of Illinois for purposes of registration must be a bona fide resident of the state for three months preceding the beginning of any quarter for which he registers at the University and must present evidence that he is self-sustaining and not under parental control.

7. An adult alien who holds valid immigration papers and is in the United States under an immigrant-type visa may qualify as a resident of the state for purposes of registration in the University if he has lived within the state for at least a period of twelve months next preceding the beginning of any quarter for which he registers at the University, subject to the provisions of rules 4 and 6.

8. Several factors will be considered in the determination of each individual case. Among the factors to be considered will be (a) location of draft board registration, (b) voting address, if any, (c) the degree of self-support of the student, (d) location of summer or vacation employment.

9. All cases of appeal shall first be referred to the Legal Counsel of the University. An appeal from the Legal Counsel shall be in accordance with University statutes.

Note: In the above regulations an adult student is considered to be a male at least 21 years of age or a female at least 18 years of age.

Instructional Units

7

CARBONDALE CAMPUS

COLLEGE OF LIBERAL ARTS AND SCIENCES

HENRY DAN PIPER, *Dean*

*Anthropology; Botany; Chemistry; English; Foreign Languages;
Geography; Geology; Government; History; Mathematics;
Microbiology; Philosophy; Physics & Astronomy; Physiology;
Psychology; Sociology; Zoology*

The College of Liberal Arts and Sciences serves the students of Southern Illinois University at Carbondale in many capacities. Its instructional staff provides (1) training in basic subject matter courses of General Studies; (2) opportunity for concentration in any of the areas listed on page 17; (3) electives not available in other instructional units of the University; (4) extension and adult education offered through the appropriate divisions; (5) graduate level instruction for students pursuing higher degrees than the baccalaureate; (6) preprofessional training needed for admission to such specialized schools as law, medicine, and dentistry.

The diversified offerings of the College of Liberal Arts and Sciences are designed to help the student achieve a balanced personality, an awareness of the cultures of the past, an appreciation of his fellow man, and a fundamental understanding of the ever-changing physical, social, and political environment in which he lives. A student in the college may prepare for teaching at the secondary level by including in his studies certain professional courses offered by the College of Education. The Bachelor of Arts or Bachelor of Science degree is granted to a student who fulfills requirements for graduation from the College of Liberal Arts and Sciences.

A candidate for a degree in the College of Liberal Arts and Sciences must have the following:

1. A reading knowledge of a foreign language. This may be satisfied by the General Studies foreign language requirement, or the equivalent.
2. Competency in English as demonstrated by examination, preferably at the beginning of the junior year.

The College of Liberal Arts and Sciences grants the Bachelor of Arts degree in the following areas. Suggested concentrations appear in the next chapter of this catalog.

Anthropology

Art ¹

Asian Studies ²

¹ These are liberal arts concentrations, not professional concentrations.

² Only secondary concentrations are allowed in these fields.

Biological Sciences ³	Government	Physics
Botany	Health Science ^{3 4}	Physiology
Central European Studies ²	History	Psychology
Chemistry	Home Economics ¹	Religion ²
Economics ¹	Inter-American Studies ^{3 4}	Russian Studies ²
English	Mathematics	Sociology
Foreign Languages	Microbiology	Speech ¹
Geography	Music ¹	Theater ¹
Geology	Philosophy	Zoology

A student planning to take preprofessional courses in any of the following areas should, after completing General Studies, register in the College of Liberal Arts and Sciences. A course of study called preprofessional does not lead to a degree at Southern Illinois University: See page 105, 153, in the General Studies catalog.

Dentistry	(3 or 4 years)	Pharmacy	(1 to 4 years)
Law	(3 or 4 years)	Physical Therapy	(2 or 3 years)
Medical Illustration	(4 years)	Public Health	(3 or 4 years)
Medical Technology	(2 or 3 years)	Theology	(2 to 4 years)
Medicine	(3 or 4 years)	Veterinary Science	(3 or 4 years)
Occupational Therapy	(2 or 3 years)		

COLLEGE OF EDUCATION

ELMER CLARK, *Dean*

Educational Administration & Supervision; Elementary Education; Educational Psychology and Guidance; Health Education; Higher Education; Instructional Materials; Physical Education for Men; Physical Education for Women; Recreational & Outdoor Education; Secondary Education; Special Education; Student Teaching; University School

The College of Education is committed to giving professional training to teachers of all subjects taught in the public schools and to supervisors, administrators, and specialists. The preparation of teachers for all grades from kindergarten through high school is the special function of the college. In its graduate offerings, however, it broadens its efforts to include professional work for prospective college teachers and several specializations in school administration and supervision. For most undergraduate students preparing to teach in high schools, the subject-matter courses will be taken in the other colleges and schools of the University, and the professional preparation for teaching, including the student teaching, will be taken in the College of Education.

At Southern Illinois University a high school graduate looking for a

¹ These are liberal arts concentrations, not professional concentrations.

² Only secondary concentrations are allowed in these fields.

³ Those who concentrate in these fields need no secondary concentrations.

⁴ No secondary concentrations are allowed in these fields.

career in the educational world can prepare for high school, elementary, or kindergarten-primary teaching; for coaching; for positions in school administration; for guidance work; for teaching and supervising special education; and for other community services. He can prepare to teach in special fields such as art, music, home economics, industrial education, business, and agriculture. He can prepare to be a teacher of science, social studies, English, and mathematics. He can get a teaching specialization in specialized fields such as speech correction and general speech. He can dedicate himself, if he wishes, to the teaching of mentally handicapped children, the hard of hearing, or the partially sighted. Physical education as a field attracts many able men and women, as do such newer fields as recreation and outdoor education. The graduate may look for a career in health education or in school counseling. He may prepare to be a principal or a superintendent by going on with graduate work, or even to be a teacher of teachers in some college or university.

The College of Education grants the Bachelor of Science and the Bachelor of Music Education degrees.

Supervised student teaching is conducted in the University School and in co-operating public schools. The College of Education requires 12 to 16 hours of student teaching for the Bachelor of Science degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Administration and Supervision. The department's major emphasis is on graduate work, but it also participates in providing background for elementary and high school teachers.

TEACHING CERTIFICATES

Students preparing to teach in the public schools of Illinois should be informed that requirements for the Standard Elementary School Certificate are listed on page 71 under Elementary Education; those for the Standard High School Certificate and the Standard Junior College Certificate are listed on pages 118–119 under Secondary Education; those for the Standard Special Certificate are listed on page 120.

Students planning to teach on the early childhood and elementary levels register in the College of Education. Most students planning to teach on the high school level also register in this college. However, it is possible for a student to be registered in one of the other colleges or schools and meet the state requirements for a standard high school certificate by using as his electives certain prescribed courses in the College of Education. This is also true in the case of those seeking to qualify for a special certificate.

Students qualifying for teaching certificates in Illinois should also know that no certificate issued after July 1, 1953, will be renewed for the first time unless the person holding the certificate passes an examination to the satisfaction of the certificating authority upon the provisions and principles of the Constitution of the United States and of the state of Illinois. This requirement may be fulfilled by completing either Government 231 and 330 or one of the following: GSB 201b, 211b, 300a, Government 300, History 201–3, or 330.

SCHOOL OF AGRICULTUREWENDELL E. KEEPPER, *Dean**Agricultural Industries; Animal Industries; Forestry;
Plant Industries*

The School of Agriculture provides opportunity for the students to prepare themselves professionally through concentrating on study of agricultural and forest production and of services and industries closely related thereto. Through teaching of formal courses; conducting research of significance to agriculture and forestry of the area; and providing consultation and service to the people of Southern Illinois in all phases of agriculture, forestry, and related occupations, the School of Agriculture strives to encourage better use of rural resources for the general welfare of all.

More than 85 per cent of Southern Illinois University's graduates in agriculture have entered such major employment areas as agricultural business, advanced professional training for research and teaching, agricultural education and government services. About 10 per cent have gone into farming. Most forestry graduates have taken governmental or industrial positions.

As pre-college preparation of high school students for study of agriculture and forestry, it is recommended that the following be included: four units of English, two to four units of mathematics (algebra, geometry, advanced mathematics); two to three units of science (biology, chemistry, physics); and two to three units of social studies. Remaining units might well include agriculture.

The School of Agriculture grants the Bachelor of Science degree in the following areas. Descriptions of the concentrations appear in chapter 8 of this catalog.

Agricultural Education	Animal Industries	Plant Industries
Agriculture, General	Production	Production
Agricultural Industries	Science	Science
Agricultural Economics	Forestry	
Agricultural Business	Forest Resource	
Agricultural Engineering	Management	
Services	Forest Recreation and Park Management	

A student planning to take preprofessional courses in pre-veterinary science or pre-dairy technology should, after completing the General Studies courses, register in the School of Agriculture.

SCHOOL OF BUSINESSROBERT E. HILL, *Dean**Accounting; Economics; Management; Marketing;
Secretarial & Business Education*

The School of Business aims to prepare the student for successful performance in the business world. The courses of study develop not only a knowledge of the functioning of the economy, the operational methods of business,

and a familiarity with the sources of information and methods of collecting and interpreting data but also an understanding of, and a skill in, the art of human relations plus a high sense of integrity and responsibility.

Students can normally expect to earn the Bachelor of Science degree in four years. A student in the school may prepare for teaching at the secondary level by including in his studies certain professional courses offered by the College of Education.

SCHOOL OF COMMUNICATIONS

C. HORTON TALLEY, *Dean*

*Journalism; Printing & Photography; Radio-Television;
Speech; Speech Correction; Theater*

The School of Communications is set up to allow the students of the University to specialize in the study of the various mass communications media and to develop skills in the utilization of those media.

The School of Communications also is interested in research work in the various aspects of mass communications, and in making consulting and other services available to area schools, newspapers, radio and television stations.

SCHOOL OF FINE ARTS

BURNETT H. SHRYOCK, *Dean*

Art; Music; Design

The School of Fine Arts serves as an instrument of the University for the direction of training and the stimulation of creative and professional work in the fine arts. It also serves students, enrolled in other academic units, who want an experience in the fine arts for either cultural or practical reasons. It offers undergraduate concentrations leading to the Bachelor of Arts or the Bachelor of Music degree.

The School of Fine Arts sponsors a number of special events each year. A Fine Arts Festival, which lasts several weeks, includes lectures by noted artists, musical ensembles, individual performances, dance recitals, dramatic presentations, and art exhibitions. A continuous planning of art exhibitions and an intensive series of public music performances are presented at no cost to students and faculty members. The Department of Music is an institutional member of the National Association of Schools of Music.

SCHOOL OF HOME ECONOMICS

EILEEN E. QUIGLEY, *Dean*

*Clothing & Textiles; Food & Nutrition; Home & Family;
Home Economics Education*

The major objectives of the School of Home Economics are to provide instruction, to stimulate research, to provide service work in home economics for other educational units desiring it, and to give to the people in the

area service which will help in improving the understandings and practices in their families and homes.

Students in the School of Home Economics may follow courses of study leading to the Bachelor of Science degree.

SCHOOL OF TECHNOLOGY

JULIAN H. LAUCHNER, *Dean*

*Applied Science; Engineering; Engineering Technology;
Industrial Education; Industrial Technology.*

The School of Technology seeks to attain through each graduate certain broad objectives. Its courses of study are designed to effect an educational philosophy in all areas of technology. The school is dedicated to the task of providing education, research, and consultative services. Motivated by the characteristics of Southern Illinois and its potential for industrial development, the school is developing courses of study to meet the present and anticipated technological needs of the area.

The courses of study in the School of Technology are designed to provide instruction, and to stimulate research in all areas of technology. These courses of study serve to eliminate the barriers and to bridge the gaps between scientists, engineers, and technologists—between theories and their applications—between the creative and practical aspects, in the basic areas of science, engineering, and industry.

Its course offerings provide:

- (1) Basic subject matter for development of the scientific and technological method and philosophy;
- (2) Preprofessional and professional training in the field of engineering;
- (3) Extension and adult education offered through the appropriate divisions of the University;
- (4) Graduate level instruction for students pursuing higher degrees.

High school students preparing for study in the School of Technology should have four units of English, two and one-half to four units of mathematics (algebra, geometry, trigonometry), two to three units of social studies, and two to three units of science (biology, chemistry, physics); physics is especially recommended. They should apply to the Admissions Office, Southern Illinois University, at the beginning of the last semester in high school.

EDWARDSVILLE CAMPUS

BUSINESS DIVISION

JOHN J. GLYNN, *Head*

*Accounting; Business Education; Economics;
Management; Marketing*

The Business Division prepares men and women for positions of responsibility and leadership in the business world. It provides the student with a broad base of general education in addition to a liberal education in the various

disciplines of business, including accounting, economics, finance, management, marketing, business law, and statistics. Not only is the student given the opportunity to gain a knowledge of the operational phases of business, particularly through the use of case methods to simulate actual business conditions and problems, but also he is given an insight into the social responsibilities of business. The student is given an understanding of, and a skill in, the art of human relations and a high sense of integrity and responsibility. The student is prepared for a career in private business, in government, or in education as a teacher of business subjects.

A student who intends to concentrate in one of the disciplines of the Business Division should plan his course of study with a faculty adviser. Upon completion of 64 hours, the student should file a Declaration of Concentration form and immediately arrange a conference with his faculty adviser. A student is required to have a grade of *C* or higher in his area of concentration. (e.g., A concentration in economics would require a *C* grade or higher in each course of economics.)

The student must have at least 77 quarter hours (40%) in the Business Division and at least 77 quarter hours outside the division.

EDUCATION DIVISION

H. DENE SOUTHWOOD, *Head*

Education Administration; Elementary Education; Guidance; Health Education; Instructional Materials; Physical Education for Men; Physical Education for Women; Psychology; Secondary Education; Special Education; Student Teaching

The Education Division, in keeping with the traditions of Southern Illinois University, stands committed to the development of effective professional educators. The Education Division offers a dynamic and expanding program dedicated to the development of professional educators to meet the needs of a variegated and changing community with ever broadening horizons. Teachers are prepared for all levels of learning and in the subject matter areas of the public school program.

For undergraduate students preparing to teach in the secondary school, the preparation for teaching, including student teaching, is taken in the Education Division, and the subject matter concentration is taken in other divisions. Courses of study for supervisors, administrators, and specialists, as well as basic and advanced courses in the fields of psychology and guidance, constitute an important part of the broad offerings of the division.

Students anticipating careers in education may prepare for secondary, elementary, and kindergarten teaching; for school administration and supervision; for health, recreation, and physical education; for guidance, psychology, and special education; for instructional materials; and for other community services. For secondary school teaching areas see page 121.

Supervised student teaching is conducted in the public schools of the broad and varied geographic area serviced by Southern Illinois University.

The Education Division grants the undergraduate Bachelor of Science degree.

CERTIFICATION

Students preparing to teach must register with the Education Division for advisement concerning certification requirements.

FINE ARTS DIVISION

ANDREW KOCHMAN, *Head*

Art & Design; Music; Speech & Theater

The objectives of the Fine Arts Division are to broaden and intensify experiences in the fine arts in the area served by the University; to impart to all University students an awareness of the cultural values of the arts through formal courses of instruction, exhibitions, concerts, and performances; to provide facilities for the creative and scholarly pursuit of the arts; and to offer specialized courses of study to serve the ends of liberal and professional education.

The faculty of music is an associate member of the National Association of the Schools of Music.

HUMANITIES DIVISION

GERALD J. T. RUNKLE, *Head*

American Studies; Comparative Literature; English Language & Literature; Foreign Languages & Literature; Journalism; Philosophy; Professional Writing

The Humanities Division provides instruction in the intellectual disciplines of English and other languages, of literature, and of ideas. The division is concerned with instruction in the reading, writing, and speaking of English and other languages, the development of an understanding and appreciation of literature, and the concomitant recognition of its civilizing values. The division guides advanced students in methods of studying and arriving at comparative evaluations regarding the works, men, and movements that make up literary and intellectual history. All students are encouraged to think and to write rationally, imaginatively, and responsibly as they learn to identify persistent human problems and their classic and current solutions.

SCIENCE AND TECHNOLOGY DIVISION

KERMIT G. CLEMANS, *Head*

Applied Science; Biology; Botany; Chemistry; Mathematics; Physics & Astronomy; Physiology; Science & Technology; Zoology

The Science and Technology Division contributes to the general education of all students by offering basic courses in mathematics and the natural sciences. The division provides a basic program in applied science and pre-engineering. For more advanced students the division seeks to develop an understanding of methods and disciplines that will help equip the student to make a living in areas embracing nature, technological, and industrial processes.

Candidates for the Bachelor of Arts degree with concentrations in any of the disciplines in the Science and Technology Division must meet the following requirements:

1. At least 48 hours of credit in one area of concentration with the grade of *C* or higher in each course in the area (Specific courses, to be included in a particular concentration, are listed in the course of study) ;
2. At least 9 hours of credit in the area of concentration in courses numbered above 299 must be earned at Southern Illinois University within the two years preceding the completion of requirements for the degree.

Upon the completion of 64 hours of college credit, each student in the division must file a tentative course outline with his division adviser.

If a candidate for the Bachelor of Science degree in education selects an area of concentration which is in the Science and Technology Division, then he must have at least 48 (or 36 if he also has two 27-hour concentrations in other areas) hours in that area with the grade of *C* or higher in each course.

A secondary concentration for a student in the Science and Technology Division must include at least 27 hours of credit with a grade of *C* or higher. Specific requirements, if any, are listed under the heading *Secondary Concentration* in the particular discipline.

To qualify for honors in an area of Science and Technology, one must complete at least 57 hours of credit or the equivalent in that area including successful completion of 9 hours of the corresponding honors program. For further information regarding the Honors program offered by the Science and Technology Division, refer to Individual Honors Work, in this catalog.

SOCIAL SCIENCES DIVISION

ROBERT CAMPBELL, *Head*

American Studies; Anthropology; Economics; Geography; Government; History; Psychology; Public Administration & Planning; Sociology

The Social Sciences Division offers courses designed to enable the student to achieve an understanding and appreciation of civilization viewed in historical perspective, and to gain, through the various social sciences, an awareness of the society of which he is a part and of his role in it. His studies give him insights and understandings which enable him to live more constructively with others in his family, community, and nation and which provide him with a better understanding of social organizations, technologies, and the nature and variety of human beliefs and attitudes.

DEPARTMENT OF NURSING

MARGARET T. SHAY, *Chairman*

The Department of Nursing was established by the Board of Trustees at Carbondale in 1953 as an autonomous unit in the University's educational structure. It was formally activated in 1956. The first program was considered supplementary and offered to registered nurses in the spring of 1956. The first class of students in the basic generic program was admitted in the fall of 1956. In the fall of 1963 the two programs were combined. In July,

1963, the Board of Trustees approved moving the nursing program to the East St. Louis Center of the Edwardsville Campus. At present all of the program may be taken at the East St. Louis Center; the first six quarters, which is preclinical and primarily liberal arts subjects, may be taken on the Carbondale Campus; the remainder must be taken at the East St. Louis Center.

The Department of Nursing has as its controlling ideal the education of students in a broad understanding of their cultural heritage; the appreciation of spiritual, aesthetic, and moral values in personal, civic, and professional living; the cultivation of critical and constructive thinking related to general as well as health needs of all individuals and to local, national, and international health problems. The course of study is (1) based on a broad foundation of liberal arts, (2) emphasizes the importance of prevention of illness as well as its curative requirements, (3) gives understanding of the physical, mental, emotional, and social aspects of health and illness and their interrelatedness, and (4) helps each student develop the ability and desire to give the best possible nursing care to society.

Applicants to the program may be either registered nurses, graduates of diploma or associate degree programs, or high school graduates who wish to become registered nurses and obtain the baccalaureate degree with a concentration in nursing.

There are no restrictions regarding age, marital status, race, color or creed to admission of applicants providing they meet all other requirements. Students are evaluated on the basis of mental and physical health, personality and character traits, academic achievement and progress toward professional maturity.

A registered nurse who wishes to enter the program must meet all requirements for admission to the University and in addition:

1. Be a graduate of a state-approved School of Nursing.
2. Be a registered nurse currently licensed to practice.
3. Show satisfactory placement on Graduate Nurse Examination.
4. Registered nurses who wish to enroll for clinical nursing subjects which include field work must make arrangements with the Department of Nursing three quarters before the date of registration for the course.

(Advanced credit may be allowed.)

Steps to take for Admission:

1. Obtain application forms from the University and proceed with all instructions therein.
2. Arrange for a personal interview with a faculty adviser in the Department of Nursing.
3. Early registration for classes according to the schedule which will be mailed the applicant is advisable.

During the last quarter of preclinical study students must purchase uniforms. The approximate cost is \$65 to \$75.

Students may live at home, in residence halls, or in approved off-campus housing.

Several hospitals, public health agencies, day care centers, nursery schools and other community institutions are used for clinical experience.

Students are expected to pay their own travel expenses to and from these facilities.

A limited number of scholarships, traineeships, grants and loans are available to student nurses from national, state and local resources. Secure Financial Assistance catalog for listing.

P R E P R O F E S S I O N A L P R O G R A M S

Preprofessional students may, subject to certain conditions, obtain a bachelor's degree after three years' work (144 quarter hours) at Southern Illinois University and one or more years' work in a professional school. During their three years of residence at Southern Illinois University they need to have completed all requirements other than elective hours for the bachelor's degree which they are seeking.

In some cases the completion of concentration requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate divisional head. Also, there needs to be completion of at least one year of professional work with acceptable grades in a Class A medical school, a Class A dental school, a Class A veterinary school, or an approved law school. In all cases, all University graduation requirements must be met. It is advisable for a student interested in this program to make his decision to seek a bachelor's degree before entering the professional school so that any questions may be clarified at an early date. Preprofessional training is offered in the areas of medical technology, medicine, dentistry, and veterinary science.

Students working toward the Bachelor of Science degree in Agriculture may attend the Edwardsville Campus their freshman year and transfer to the Carbondale Campus for the completion of the degree. In preparing for one of the agriculture professions, the student should follow closely the appropriate course of study as suggested in this catalog.

Students working toward a Bachelor of Science degree in home economics may attend the Edwardsville Campus their freshman and sophomore years and transfer to the Carbondale Campus for the completion of the degree. In preparing for this degree, the student should follow closely the appropriate course of study in this catalog.

A L L - U N I V E R S I T Y U N I T S

A E R O S P A C E S T U D I E S

LT. COL. JAMES VAN AUSDAL, *Commander*

The Air Force Reserve Officers Training Corps Detachment at Southern Illinois University is a senior division ROTC unit administered by commissioned officers of the USAF who have been assigned by the Department of the Air Force with the approval of the University. These officers are appointed as members of the University's instructional staff. The senior officer is designated as Professor of Aerospace Studies and Detachment Commander. Airmen are assigned to assist in practical instruction and administration and to assist in the care of federal property. The University Corps

of Cadets consists of all students pursuing AF ROTC training. General Military Course cadets retain their civilian status until they become fully qualified members of the Professional Officer Course, at which time they are enlisted in a special Ineligible Air Force Reserve Status .

The AF ROTC course of study is offered in either the two or four-year program on the Carbondale campus and the two year program only on the Edwardsville campus. The four-year program is divided into the General Military Course (GMC), covering the Freshman and Sophomore years, followed by a four-week summer training unit and the Professional Officer Course (POC), covering the Junior and Senior years. The two-year program commences, after satisfactorily passing mental and physical tests and an evaluation process, with a six-week summer training unit between the Sophomore and Junior years and is followed by the POC, as in the four-year program. An additional facet and incentive of the four-year course is the Financial Assistance Program, a scholarship grant to several outstanding cadets entering the POC, covering tuition, books, fees, laboratory expenses, supplies and an increased retention pay above that of other POC cadets. The courses are designed to provide the fundamental training, both personal and professional, which will best equip a cadet to become an effective junior Air Force officer possessing a high growth potential and also to develop and stimulate a growing desire on his part to enter the Air Force flight training program. The GMC is designed with two additional objectives in mind: first, to interest the cadet in the possibility of continuing in the advanced AF ROTC and ultimately making the Air Force his career; and second, to provide him with *Space Age* citizenship training of long-range value to the Air Force whether he returns to civil life or becomes a member of the USAF. Emphasis is given throughout both courses, primarily in the POC, however, both in theory and practice, to outlining the leadership and managerial duties and responsibilities of squadron level officers, to improving oral and written expression, and to learning techniques of the problem-solving process.

In addition to the AF ROTC programs offered for academic credit at the Carbondale Campus, the Department of Aerospace Studies indorses or directly sponsors a number of extracurricular activities. The Arnold Air Society is open to selected cadets of all four years, and is a national professional fraternity. Membership in the Angel Flight, an auxiliary of the Arnold Air Society, is open to selected undergraduate women. Other activities open to cadets are the Honor Guard, the Band, and the Singing Squadron. Cadets may also compete for numerous trophies and awards available to members of the Cadet Corps.

The GMC for freshmen consists of two hours of classroom instruction during the spring quarter and one hour of Leadership Laboratory each week throughout the fall, winter and spring quarters. For sophomores the GMC consists of two hours of classroom instruction during the fall and winter quarters and one hour of Leadership Laboratory each week throughout the fall, winter, and spring quarters.

The POC consists of six quarters of prescribed academic work in addition to the four week summer training unit for four-year program students.

It is the same for two-year program students, except that the six-week summer training unit for these individuals precedes entry into the POC, and they do not attend the four-week camp prescribed for four year program cadets. The object of the POC is to qualify students for appointment as second lieutenants in the United States Air Force Reserve.

Selection of students for enrollment will be made by the Professor of Aerospace Studies as provided in Public Law 88-647, from qualified applicants as follows:

1. Conditions of Service. All POC students will be members of the Ineligible Air Force Reserve and will be placed under contract with the government. The contract will contain the following provisions:
 - a. The student agrees
 - (1) Unless sooner released for the convenience of the government, to complete the POC and to attend the summer training unit at the time specified by proper authority.
 - (2) To accept an appointment as second lieutenant, United States Air Force Reserve, if and when tendered.
 - b. The Department of the Air Force agrees to pay the student a retention fee at a monthly rate as announced by that department. The current rate is \$40 per month for a maximum period of 600 days. For Financial Assistance Program students the rate is \$50 per month.
2. Personal Qualifications
 - a. A student must have completed the GM course or its equivalent in previous service, or the six week field training, if a two-year program student.
 - (1) Students who have had previous training or service may receive credit toward entrance into the POC within the following limits.
 - (a) On the basis of previous honorable service in the Air Force, Army, Navy, Marine Corps, or Coast Guard, a cadet may request a waiver of the GM course, or any portion thereof, as a requirement for entrance into the POC.
 - b. In age, the student must not have reached his twenty-fifth birthday at the time of initial enrollment in the POC.
 - c. The physical standards prescribed for appointment to the United States Air Force Reserve in AFM 160-1 will apply. Due allowance will be made for physical defects that can be corrected.
 - d. Mental and educational requirements:
 - (1) A satisfactory score for the Air Force Officer Qualification Test will be required.
 - (2) The fact of enrollment in Southern Illinois University and academic *good standing* will be accepted in satisfaction of education requirements.
 - (3) At the time of acceptance, the applicant must have at least two academic years remaining to complete all prerequisites for graduation from the University; or, if he is a graduate

student, he must have a like period of time remaining to complete all work for an advanced degree. In addition, an applicant's academic standing must be in phase with his AF ROTC training.

3. In addition to the monetary emoluments listed above POC cadets receive:
 - a. An officer-type uniform—cadets will be furnished a uniform on a commutation basis. The uniform remains in the cadet's possession during his two-year enrollment and becomes his property upon successful completion of the AF ROTC program.
 - b. The pay of the first enlisted grade (\$120 per month) while at advanced summer training unit and travel pay to and from that unit at the rate of 6¢ per mile.

The POC will consist of three hours of instruction per week for a minimum total period of seventy-two weeks.

The program of the POC will consist of generalized courses designed to develop those attributes of character, personality, and leadership which are essential to an officer in the USAF, supplemented by practical training in leadership and exercise of command.

Advanced Air Force ROTC summer training units of four weeks' duration will be conducted annually at Air Force installations to be designated by the Department of the Air Force. The six week camps will be similarly conducted.

Students enrolled in the four-year course will be required to complete the summer training program prior to receiving their commission. They will normally attend camp immediately after completing the first-year of the POC.

Students enrolled in the AF ROTC courses at Southern Illinois University receive the following credits:

	HOURS
2 hours of credit for each academic quarter of the GM course	6
3 hours of credit for each academic quarter of the PO course	18*
Total hours of credit for the GM and PO courses	24

* Except A.S. 350, which is 4 hours of credit and not part of above total.

All credit received for the AF ROTC courses is allowable toward a bachelor's degree.

Air Force ROTC textbooks will be furnished on a loan basis to all AF ROTC students. They remain the property of the federal government and must be properly handled.

Uniforms are furnished by the University for the use of the GMC AF ROTC students. In case a uniform should become so worn or damaged as to be unfit for wear, the student may be held responsible to the extent determined by proper authority.

All cadets are required to wear the uniform on such days and occasions as directed by the Professor of Aerospace Studies.

AIR FORCE ROTC AWARDS

Awards are presented to outstanding cadets at the close of the school year. Details concerning such awards are published at appropriate times on the cadet bulletin board. The following awards will be presented to recipients at an Awards Ceremony, at Southern Illinois University, held in May of each academic year.

1. The Commander's Award. Awarded by the detachment to cadet commanders appointed during the school year. Awarded in recognition of leadership ability as demonstrated in command positions in the cadet corps.

2. The Trustees' Award, Senior Student. Awarded to the outstanding cadet in the senior year, based on standing in the University and in AF ROTC, and aptitude for general service.

3. The Trustees' Award, Junior Student. Awarded on the same basis as for senior cadet, except to a junior.

4. The Trustees' Award, Sophomore Student. Awarded on the same basis as for senior cadet, except to a sophomore.

5. The Trustees' Award, Freshman Student. Awarded on the same basis as for senior cadet, except to a freshman.

6. Air Force Association Medal, Outstanding senior cadet. Awarded to the senior cadet making the highest military grades of the year.

7. The Reserve Officers' Association Award, junior student. Awarded to the outstanding junior cadet, based on the University and AF ROTC grades for the current year and aptitude for general service.

8. The Air Force Times Award. Awarded to the senior cadet bringing constructive attention to the cadet corps.

9. Chicago Tribune Award, Junior Student. Awarded at the end of the first and third quarters of each school year to the outstanding junior cadet, based on the highest grade in the particular military course of the current quarter and aptitude for general service.

10. Chicago Tribune Award, Sophomore Student. Awarded on the same basis as junior cadet, except to a sophomore.

11. General Dynamics Award, Sophomore Student. Awarded to the outstanding sophomore student applying and selected for the POC in a category leading to pilot training.

12. American Legion Auxiliary Awards. National security awards, presented to AF ROTC cadets in recognition of continued outstanding service in the interest of the corps.

13. McDonnell Aviation Award. Awarded to the outstanding senior cadet who has been selected for pilot training.

14. Sons of American Revolution. Awarded to that General Military Course cadet with highest over-all academic standing and military aptitude.

DIVISION OF UNIVERSITY EXTENSION

RAYMOND H. DEY, *Dean*

The purpose of the Division of University Extension is to make university credit courses available to people who are not in residence. It calls upon

the various instructional agencies of the University for the personnel used to carry out its program.

Southern Illinois University is a member of the National University Extension Association and meets the standards of this association.

Scheduling off-campus college credit classes is a chief function of the Division of University Extension.

Instructors of extension courses are members of the regular university faculty, and the work offered meets all of the requirements of the American Association of Colleges for Teacher Education and the North Central Association of Colleges and Secondary Schools. Up to 96 hours earned in extension may be applied toward a bachelor's degree.

A maximum of one-half of the number of hours required for the bachelor's degree, or 96 hours, may be taken by extension and correspondence courses combined. Of this total, not more than 48 hours may be taken in correspondence courses.

While Southern Illinois University does not maintain a correspondence division, courses taken by correspondence from institutions which are members of the Association of American Universities are regularly accepted if the grade earned is *C* or above.

DIVISION OF TECHNICAL AND ADULT EDUCATION

ERNEST J. SIMON, *Dean*

The Division of Technical and Adult Education serves adults and high school graduates interested in obtaining a college-level course of instruction of a shorter duration than the usual four-year college program, qualifying them for employment at the semi-professional and technical level in industry and business.

VOCATIONAL-TECHNICAL INSTITUTE

The Vocational-Technical Institute on the Carbondale Campus and on the Edwardsville Campus provides for high school graduates one and two-year college-level terminal courses of study for training technicians. These courses of study are designed to prepare men and women to fill the positions in business and industry between the skilled worker and the engineer or professional man. (See Division of Technical and Adult Education bulletin.)

ADULT EDUCATION

The Adult Education course of study consists of noncredit courses in various vocational, technical, and general education fields designed to provide a wide variety of educational opportunities for adults.

Most courses range in length from eight to twelve weeks, two or three hours weekly. Certain special courses are offered for sixteen to twenty-four weeks. These tailor-made courses are varied to meet the interests and needs of the adults served. (See Division of Technical and Adult Education bulletin.)

The adult education courses are taught by regular staff members obtained from every division and school of the University, as well as carefully selected specialists from the ranks of business, industry, and the professions.

COMMUNITY DEVELOPMENT INSTITUTE

RICHARD C. FRANKLIN, *Director*

The Community Development Institute has been established for students seeking training in work with individuals and groups striving to develop a more satisfactory life within the community setting. The institute's purposes also include training of adults concerned with improving their community leadership, and co-operating with academic units of the University and other agencies in research undertakings to investigate community processes and social change. Research findings from these undertakings become invaluable to the communities in their development.

LABOR INSTITUTE

JOHN M. McDERMOTT, *Director*

The function of the Labor Institute is to promote harmony and cooperation between labor and management by encouraging the training of students and others interested in labor and industrial relations and to provide advice on the technical aspects of labor and industrial relations to labor, to industry, and to the public.

LATIN AMERICAN INSTITUTE

A. W. BORK, *Director*

In order to provide a special course of study for the student interested in Latin America, the Latin American Institute offers an undergraduate concentration in inter-American studies leading to the Bachelor of Arts degree in the College of Liberal Arts and Sciences.

SMALL BUSINESS INSTITUTE

R. RALPH BEDWELL, *Director*

The primary objective of the Small Business Institute is to develop executives for small businesses, rather than to create specialists in a single field such as accounting, finance, sales, etc. Management of a smaller business requires more all-around "know-how." While concepts taught are those of modern big business, the applications are directed to small business operations.

Graduates from this four-year course of study receive the Bachelor of Science degree in small business management, granted by the School of Business.

TRANSPORTATION INSTITUTE

ALEXANDER R. MACMILLAN, *Director*

The Transportation Institute has been established to help meet the increasing need for specially educated men and women in the transportation industry. To this end, the institute, in co-operation with other agencies of the University, will arrange for special graduate, undergraduate, and adult education courses in transportation.

Areas of Concentration

8

ACCOUNTING

Accounting is the means by which the many transactions of business are analyzed, recorded, presented, and interpreted. The ability to analyze, present, and interpret is not acquired easily; it is one that takes thorough and serious study.

The accounting courses are designed to develop those abilities which lead to professional positions in cost accounting, auditing, income tax, financial statement analysis, and general financial accounting. The operation of a business and its financial condition are of interest to its owners, to its employees, to its creditors, to the various governmental bodies, and to the public.

Accounting courses cover four basic areas of study: theory, cost accounting, tax, and auditing. In addition to the four basic areas, special courses are offered in governmental accounting, accounting systems, and Certified Public Accountant problems. Although individuals trained in accounting might work in private industrial firms, public accounting firms, governmental agencies, or in college teaching, the four basic areas in accounting are needed as background. Those individuals desiring to engage in public accounting in Illinois should familiarize themselves with the Illinois laws and regulations covering the certification of public accountants. The regulations are published by the Committee on Accountancy, University of Illinois, Urbana, Illinois.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Accounting</i>	80
GSB 211-9, GSD 110-3	(12)
Accounting 251-12, 331, 341, 351-8, 456	32
Accounting 432, 442, 453 (choose at least two)	8
Accounting 355, 415, 458, 459, 461. Choose one unless three were chosen above	3-4
Economics 214, 215, 315	10
Management 320, 340, 371, 372 or 373, 481	20
Marketing	7
<i>Electives</i>	15-16
<i>Total</i>	192

SECONDARY CONCENTRATION

Requirements for a 24-hour secondary concentration in accounting consist

of 251-12, 8 hours of accounting courses numbered 300 or above, and Management 170 or 340.

EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Accounting</i>	87
GSB 211a, GSD 114-9	(12)
Accounting 251-12, 331, 341, 351-18, 442, 453-8, 456	44
Accounting 355, 432, 458, 461 (any one)	4
Economics 210, 315; 470 or GSB 311	12, or (3) + 9
Management 170, 271, 320, 340, 371, 372 or 373	25
Marketing 230	5
<i>Electives</i>	18
<i>Total</i>	192

SECONDARY CONCENTRATION

Requirements for a 24-hour secondary concentration in accounting consist of 251-12, 8 hours of accounting courses numbered 300 or above, and Management 170 or 340.

AFRICAN STUDIES

Although a number of courses concerned with Africa are offered, they are insufficient in hours of credit to permit a secondary concentration. The African Studies Committee can give information about the courses available and can also supply advice and assist research on African subjects with its bibliographical and documentary materials. Address the chairman of the committee, Department of Anthropology, Southern Illinois University, Carbondale, Illinois 62903.

AGRICULTURE, GENERAL

General agriculture, intended for students seeking broad backgrounds in agriculture, is probably the best agricultural plan for students who have not chosen a professional area for emphasis.

Students gain basic preparation for many of the agricultural careers: general farming, agricultural services, agricultural extension, agricultural communications, agricultural business, agricultural industry, and agricultural production. Students who initially enroll in general agriculture may transfer to other agricultural areas of concentration or they may continue in general agriculture and select courses from various fields.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirement</i> (See Chapter 3.)	96
<i>Requirements for Concentration in General Agriculture</i>	60

Agricultural Industries 114 or 350 or 354, and others	12
Animal Industries 105 or 125 or 231, 315, and others	12
Forestry or Agricultural Industries: agricultural engineering	3-5
Plant Industries 103, 264 or 309, and others	12
Electives in agriculture	20-24
<i>Electives</i>	36
<i>Total</i>	192

AGRICULTURAL INDUSTRIES

In agricultural economics, courses are offered in the following fields: farm management, farm credit, agricultural prices, agricultural marketing, agricultural marketing, agricultural co-operatives, and farm policy. An agricultural business option is available.

Courses are offered in the four fields of agricultural engineering; rural electrification, farm power and machinery, farm structures, and soil and water engineering. A special course of study is available to train farm machinery specialists for positions requiring managerial ability for dealer services and sales work.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Agricultural Industries</i>	75-76

Three options are available:

AGRICULTURAL ECONOMICS	OPTION	A	
AGRICULTURAL BUSINESS	OPTION		B
AGRICULTURAL ENGINEERING SERVICES	OPTION		C
GSB 314	(3)	(3)	
Agricultural Industries 114, 350, 354, and others	24	24	
Agricultural Industries 114, 354, 214, 306, 373, and others	0	0	36
Animal Industries 105 or 231, 315	8	8	8
Plant Industries 103	4	4	4
Plant Industries 309	0	0	4
Forestry or Plant Industries	4	4	0
Electives in agriculture	17	8	8
	57	45	60
Social Sciences and Business	19		
Social Sciences, Business, and Communications		31	
Business and Related Courses			15
<i>Electives</i>			29-30
Courses to complete a total of 192 hours	29	29	30
<i>Total</i>			192

AGRICULTURAL EDUCATION, VOCATIONAL
CARBONDALE CAMPUS

In agricultural education, completion of a four-year course of study leads to certification as a teacher of vocational agriculture. Courses in both the School of Agriculture and the College of Education are included. A student may receive a Bachelor of Science Degree and take at least part of the additional courses at the graduate level to qualify to teach Smith Hughes Vocational Agriculture.

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Vocational Agricultural Education</i>	81
Agricultural Industries: agricultural economics courses	12
Agricultural Industries: agricultural engineering courses	12
Animal Industries	12
Plant Industries	12
English 391 or proficiency exam	(3) or 0
Forest 360 or Plant Industries 264	4
Electives in technical agriculture	20
Social Sciences	9
<i>Professional Education Requirements</i>	33-35
Agricultural Industries 210, 309, 312-12	19
Two of the following: Agricultural Industries 311, Educational Administration and Supervision 335, Guidance 422, Instructional Materials 417, Secondary Education 407, 440	6-8
Guidance 305	4
Secondary Education 310	4
<i>Total</i>	201-203

AMERICAN STUDIES

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in American Studies</i>	68
American Studies 398	4
English 309-8	8
Foreign Language (2 or 3 years in a language)	(9) + 9
GSB 300-9	(6) + 3
Philosophy 381b,c, 386-4	12
Approved courses in history, social sciences, literature, philosophy, fine arts, and other areas (At least two courses must be in speech or fine arts.)	32
<i>Electives</i>	28
<i>Total</i>	192

ANIMAL INDUSTRIES

Instruction, research, demonstration, and consultation are provided in the fields of livestock, dairy, and poultry production, pre-veterinary science, and pre-dairy technology. Courses are offered in all phases of animal production, animal nutrition, and livestock management.

The student has opportunity to select courses in other areas of agriculture or related fields such as business, biology, or physical sciences, thus being able to include the agronomic, agricultural economic, and agricultural engineering phases of agriculture or business as related to animal production.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Animal Industries</i>	69
(For an AGRICULTURAL SCIENCE option, required hours are in the second column.)	
Animal Industries 105, 125, 231 (any two)	8 8
Animal Industries 315, 332, 381-1	9 9
Animal Industries electives	31-32 19-20
Agricultural Industries	3-4 3-4
Plant Industries 103	4 4
Electives in School of Agriculture	4 4
Mathematics, physical sciences, and biological sciences	0 12
Science electives	8 8
<i>Electives</i>	27
<i>Total</i>	192

ANTHROPOLOGY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

All the major divisions of anthropology are covered, viz. archaeology, ethnology, social anthropology, linguistics, and physical anthropology. Faculty members of the department have had field experience in North, South, and Central America, the Caribbean, Europe, Africa, and the Pacific. Faculty specialization in and field experience of northern Mexico are especially strong. Emphasis is also given to the anthropology of Southern Illinois with special attention to archaeological studies.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Anthropology</i>	60
GSD FL	(9)
Anthropology 300, 303, 304, 9 hours from 305 and/or 306, 400, 401, 404, 405, 408, 409	42
At least 3 hours in each of the following: geography, geology, philosophy, psychology, sociology, and zoology	18

<i>Secondary Concentration</i>	24
<i>Electives</i>	12
<i>Total</i>	192

Students are expected to familiarize themselves with the contents of certain basic anthropological publications, whether these fall within the required courses or not. A list of these publications will be provided, and the student is expected to work out a reading course of study under the supervision of his adviser.

SECONDARY CONCENTRATION

A secondary concentration in anthropology consists of 300, 304, 400, 409, and 10 hours in courses above 300. The student is advised to consult the chairman before selecting his electives.

EDWARDSVILLE CAMPUS

A secondary concentration in anthropology consists of 27 hours including 300-4, 400-4, 409-4, GSB 201a-3, GSB 351b-3, and English 400-4 may be counted as part of the concentration.

APPLIED SCIENCE

Science is concerned with discovering and describing the structure and processes of the natural world. Applied science may be thought of as science in the process of becoming technology; it is particularly concerned with the application of new science.

The applied scientist finds that the conventional theoretical formulations often do not completely explain the phenomena with which he must deal, that pure science has tended to pass on into new fields of study so quickly that many important fields are abandoned before they are adequately investigated. He must therefore be prepared to make himself responsible for original and fundamental investigations in the physical and mathematical principles that underlie his own work, while he still holds his place as the pre-eminent intellectual agent of progress in the practical world. The applied science course of study at Southern Illinois University is directed toward the application of science in fields such as materials science, information processing science, and nuclear science.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Applied Science</i>	117
Applied Science 300-5, 450-5, 470-5	15
Chemistry 111b,c	10
Engineering 222-3, 260-9, 300-9, 331-12, 412-3	36
Mathematics 150a,b, 252a,b	19
Physics 211a,b,c	15
Technology 101a,b	6

Elective area, such as materials science, information processing science, or nuclear science	16
Total	204

EDWARDSVILLE CAMPUS

Courses to complete the first two years of the Bachelor's degree and selected advanced applied science courses are available at Edwardsville.

ART

Undergraduate offerings in art provide both introductory and specialized experiences. Courses are available for those desiring a concentration in art and for those interested in art as an avocation.

Two courses of study are offered leading toward the Bachelor of Arts degree in art. The Carbondale Campus requires 110 hours in art with the emphasis on a professional degree. The Edwardsville Campus requires 75 hours in art with the emphasis on a liberal arts degree.

The University asserts the right to withhold an example of the work of each student in each class. Such works become a part of a permanent collection from which exhibitions may be prepared.

CARBONDALE CAMPUS

To augment the regular academic course of study and enrich the experiences for the students of art, the University brings to the campus such distinguished New York artists as Herman Cherry, painter; Sidney Geist, sculptor; John Grillo, painter; Edward Millman, painter; Edward Dugmore, painter; Roy Lichtenstein, painter; Walter Plate, painter; Ad Reinhardt, painter; and David Slivka, sculptor.

The distinguished weavers Ann Albers and Ronald Cruickshank have conducted lectures and workshops as has the well-known metalsmith, Richard Thomas.

A series of panels and lectures, often combining visiting speakers and members of the regular faculty, is presented each year. This series includes such eminent scholars as Art Historian, Dr. Richard Ettinghausen, Chief Curator of Near Eastern Art, Freer Gallerys (the Smithsonian Institute), Washington, D.C.; Dr. Harry Bober, Professor of Art History, New York University; Dr. Hugo Buchta, Warburg Institute, London, England; Dr. Horst Janson, Chairman of the Art History Department, New York University. Dr. Hoyt Sherman conducted demonstrations into the phenomenon of vision and the art critics Clement Greenberg and Hilton Kramer have also participated.

BACHELOR OF ARTS DEGREE, *School of Fine Arts*

One concentrating in art should select one of the following fields of specialization by the end of his sophomore year: painting, prints, sculpture, crafts, art history, and art education. He must complete a minimum of 24 hours in art history, unless he specializes in art education.

Studio

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Art (Studio)</i>	111
Art 100-15, 200-12, and studio electives	51
Art 225-12, 345, 444, & electives in art history	24
Art crafts electives	8
Art: additional studio courses for specialization 1, 2, or 3	28
1. 325a, 358-8, 401, 406—for specialization in painting	
2. 325a, 358-8, 401, 410, 416—for specialization in prints	
3. 325-a-8, 393-20—for specialization in sculpture	
<i>Total</i>	198

Crafts

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Art (Crafts)</i>	111
Art 100-15, 200-12, and studio electives	43
Art 225-12, 345, 444, & art history electives	24
Art: crafts courses for specialization 1, 2, or 3	44
1. 302-8, 332-12, 430-12, 436-4, & electives—for specializa-	
tion in jewelry and metalsmithing	
2. 302, 426, & pottery electives to total 32 hours; 385-12	
or 420-12 or 12 hours in jewelry and metalsmithing—for	
specialization in pottery and ceramics	
3. 302-12, 332-8 (Prerequisite: 231-4), 385-12, & 440-12	
for specialization in weaving	
<i>Total</i>	198

Art Education

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Art (Education)</i>	108
GSB 331	(3)
Art 100-15, 200-12, 225, 302, 306, 307, 308, 385, electives	63
Art, studio and art history	10
Guidance 305, 422	7
Instructional Materials 417	3
Secondary Education 310, 352-12, 440	19
<i>Total</i>	195

BACHELOR OF ARTS DEGREE, College of Liberal Arts and Sciences

Students interested in the Bachelor of Arts degree in art with a specialization in art history should consult the chairman.

A student in the College of Liberal Arts and Sciences who chooses one of the five specializations in art history, crafts, painting, prints, and sculpture should consult the adviser for the area. These specializations do not fulfill requirements for teaching art.

SECONDARY CONCENTRATION

One desiring a secondary concentration in art should see the chairman.

EDWARDSVILLE CAMPUS

During the last quarter of his junior year, any art student may petition the art faculty to grant him the privilege of an exhibition of his work. Such an exhibit may be comprised of the work of an individual or may be composed of the works of several seniors. Participation is not required for graduation; permission to participate is extended in recognition of industry and ability.

BACHELOR OF ARTS DEGREE, *Fine Arts Division*

<i>General Studies Requirements</i> (See Chapter 3.)	93
<i>Requirements for Concentration in Art</i>	75
GSC 351-12, GSD FL	(15) + 6
Art 100-15, 201-8, 203-4, 310-4, 358-4, 393-4	39
12 additional hours from one of the following: ceramics, prints, painting, sculpture, or art history	12
Art Electives	18
<i>Secondary Concentration Requirements</i>	24
<i>Total</i>	192

BACHELOR OF ARTS DEGREE *with Standard Secondary Certification*

For certification, the Bachelor of Arts candidate must elect GSB 331-3, 8 hours in Art education, and 8 hours of professional education courses, plus student teaching.

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the following courses constitute a concentration in art: 100-15, 201-8, 203-8, 300-4, 310-8, 358-8, 365-4, GSC 351-12. Total: 67 hours.

SECONDARY CONCENTRATION

A secondary concentration in art requires 100-15, 201-8 or 203-8, and 8 hours from the following: 300, 305, 310, 324, 345, 346, 347, 350, 358, 365, 369, GSC 101, 351.

ASIAN STUDIES

SECONDARY CONCENTRATION, *Carbondale Campus*

A secondary concentration in Asian studies is offered within the College of Liberal Arts and Sciences. To qualify, one must present a minimum of 30 hours to be chosen from at least three areas from a list of offerings approved by the Committee on Asian Studies. Not more than 12 hours may be taken in any one area. The approved courses cover areas of instruction in agriculture, anthropology, art, economics, foreign language, geography, government, history, and philosophy.

BIOLOGICAL SCIENCES

CARBONDALE CAMPUS

The course of study is designed to give the student a broad, yet intensive education in the biological sciences preparatory for various professions, especially the teaching of biology at the secondary level. This work may be taken in either the College of Liberal Arts and Sciences or the College of Education. The science requirement for this concentration is the same in both colleges; consult Chapter 7 for differing college requirements.

The course of study consists of 72 hours (combined concentration and secondary concentration) of biological courses selected from General Studies Area A and the Departments of Botany, Microbiology, Physiology, and Zoology. In addition, work in chemistry and mathematics is required. Descriptions of the required and recommended courses may be found in the various departmental listings.

All students interested in this course of study should consult with the biological sciences adviser in life sciences for a course guide and detailed individual course planning.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Biological Sciences</i>	75
Biological Science Seminar	0
Botany 300-3, 301-3, 313-3	9
Botany 315-4 or Zoology 401-5	4 or 5
Botany 341-3 or Zoology 310-5	3 or 5
Chemistry 111-15	15
Electives from Botany, Microbiology, Physiology, and Zoology	2 - 11
GSD 108-9, or 114-9	(9)
GSA 201-9, 312-3	(12)
GSA 301-4 and Botany 320-5 or Physiology 315-15	9 or 15
Microbiology 301-5, 302-5	10
Zoology 102-5, 103-5	10
Zoology 402 or 403	4
<i>Electives</i>	30
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

If the degree is to be in the College of Education, the student must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for concentration are the same in both colleges.

SECONDARY CONCENTRATION

A secondary concentration in biological sciences consists of a minimum of 36 hours and may be taken in either the College of Liberal Arts and Sciences or the College of Education. It must include GSA 201-9, 301-4,

312-3, Botany 300-3, 301-3, Microbiology 301-5, and Zoology 102-5, 103-5. Attention is called to the fact that Chemistry 111 a,b,c-15 is a necessary prerequisite to some of these biology courses.

Biology Electives (and general electives, as desirable) will normally be selected from the following:

GSA 313, 314, 315, 321.

Botany 400, 404, 405, 411, 412, 414, 449, 451, 470.

Microbiology 403, 441, 451-6

Physiology 430, 433

Zoology 202, 300, 303, 306, 321, 406, 407, 408, 410, 413, 414, 465.

Requirements for standard secondary teaching certificate (30 hours minimum):

Guidance 305-4 (prerequisite is GSB 201c)

Secondary Education 310-4 (prerequisite is Guidance 305)

Secondary Education 352-12-16

Botany 470-4

Two from the following are required:

Guidance 422a-4

Secondary Education 440-3

Education Administration 355-4

Instructional Materials 417-4

Secondary Education 407-4

BIOLOGY

EDWARDSVILLE CAMPUS

Anyone planning a concentration in biology should consult with either a botany or zoology representative.

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Biology</i>	69
GSA 201a,c, GSD FL-9	(15)
Botany 202, 311	10
Botany 225 or 320 or Physiology 209	5
Electives in Botany, Physiology, and Zoology	13
Chemistry 111-15	15
Physics (GSA 101a,b may be used for credit)	6
Zoology 102, 103, 310, and 401	20
<i>Secondary Concentration</i> (not botany or zoology)	27
<i>Electives</i>	9
Recommended: organic chemistry, one additional quarter of physics, and three of mathematics.	
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the requirements for concentration in biology are as listed above under the Bachelor of Arts degree. Also see Secondary Education.

SECONDARY CONCENTRATION

The minimum biology secondary concentration is 27 hours including GSA 201-9 and electives in botany, physiology, and zoology.

BOTANY

Anyone considering a concentration in botany should consult with botany faculty representatives.

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Botany</i>	43-73
GSA 201-9 (5 hours count toward the 48 hours in botany)	(9)
GSD FL-9	(9)
Botany courses selected in consultation with the chairman	43
Chemistry and mathematics: a background of basic courses	0-30
<i>Secondary Concentration</i>	24
<i>Electives</i>	8-38
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration consists of a minimum of 24 hours in botany, including GSA 201-9 (which contributes only 5 hours) and excluding Botany 390 and 391.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Botany</i>	69
GSA 201-9, GSD FL-9 (German or Russian)	(18)
Botany 202, 203, 310, 311 and 320	25
Electives above 300 in botany	23
Chemistry 111-15	15
Physics (GSA 101a,b may be used for credit)	6
<i>Secondary Concentration</i> (not biology)	27
<i>Electives</i>	9
Recommended: organic chemistry, one additional quarter of physics, and three of mathematics.	
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the requirements for concentration in botany are as listed above under the Bachelor of Arts degree.

SECONDARY CONCENTRATION

The minimum secondary concentration in botany is 27 hours, including GSA 201c, 202, 310, and botany electives.

BUSINESS TEACHER EDUCATION**CARBONDALE CAMPUS**BACHELOR OF SCIENCE DEGREE, *College of Education**General Studies Requirements* (See Chapter 3.) 96

The student will follow the General Studies requirements as established by Southern Illinois University. When choices are allowed, the student will make his own selections. Each student with a concentration in business teacher education will, however, include the following General Studies courses in his program: GSB 201c-3, GSB 211a-3, GSB 211b-3, GSB 211c-3, GSD 110-3.

Requirements for Concentration in Business Teacher Education 54

Accounting 251a-4 4

Management 170-4, 371-4 8

Marketing 225-3 3

Secretarial and Business Education 201a-3 3

Preparation to teach in a minimum of four of the following Areas: 36

1. Typewriting.¹ 201b,c-6, 241-1, 304-3

2. Shorthand and Transcription.¹ 221a,b,c-12, 324a,b-8

3. Bookkeeping or Record Keeping.¹ Accounting 251b,c-8

4. General (Basic) Business Subjects. Economics 214-3 or 215-3, Management 340-4, Marketing 325-4

5. Office Practice and Machines. Requirements for teaching in Area 1, 326-4, 341-4, Management 271-4

6. Business Law. Management 372-4, 373-4

7. Salesmanship and other Distributive Education Subjects. Marketing 325-4, 329-4, 337-4

Professional Education 34-39*General Studies Requirements* (See Chapter 3.) 93

Guidance 305-4 4

Secondary Education 310-4 4

Secondary Education 352-12 or 16 12 or 16

Two of the following: 8

Guidance 422a-4

Educational Administration 355-4

Instructional Materials 417-4

¹ Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201a,b,c). Those students starting with a proficiency in shorthand may be excused from as many as 16 hours of shorthand (221a,b,c, and 324a). Those who have had high school instruction in bookkeeping will start with Accounting 251a.

Two of the following:	6 or 7
Secretarial and Business Education 403-3, 404-3, 405-3, 406-4, 408-3.	
<i>Electives</i> (Number of hours to bring total to 192)	
<i>Total</i>	192

SECONDARY CONCENTRATIONS

Secondary concentrations are offered in the following areas: (1) secretarial studies and office management, consisting of a minimum of 24 hours in business; (2) business-teacher education, consisting of a minimum of 30 hours in business.

Secondary concentrations are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Secretarial Studies and Office Management</i>	87-111
GSB 211a,b,c; GSD 114a,b,d	(18)
Accounting 251-12 ¹	12
Economics 210, 315, 470 (or GSB 311)	9 + (3) 12
Business Education 201-9, ¹ 241, 304, 327, 341, 407, 427, 428	25-34
Business Education 221-12, ¹ 324-8 or 8 hours of elec- tives in accounting, management, or marketing	8-20
Management 240, 271, 320, 340, 361, 371, 385	28
Marketing 230	5
<i>Electives</i>	0-18
<i>Total</i> ¹	192-198

BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Business-Teacher Education</i>	54
GSB 201c, 211-9, 331-3, GSD 114d	(18)
Accounting 251a	4
Management 170, 271, 371	12
Marketing 230	5
Business Education 201a,b, ¹ 351, 407	8-14
<i>At least four teaching areas selected from the following</i>	19-25

¹ Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201). Those students starting with a proficiency in shorthand may be excused from as many as 16 hours of shorthand (221 and 324a). Those who have had high school instruction in book-keeping will start with Accounting 251a.

If area 5 is chosen preparation to teach in a total of 5 areas is required.

1. Typewriting ¹: Business Education 201c, 241, 304.
2. Shorthand and Transcription ¹: Business Education 221-12, 324-8.
3. Bookkeeping or Record Keeping ¹: Accounting 251b,c.
4. General (Basic) Business Subjects: Economics 210, Management 340, Management or Marketing elective.
5. Office Practice and Machines: Requirements for teaching in Area 1, Business Education 327, 341, 427.
6. Business Law: Management 372, 373.
7. Distributive Education: Marketing 331, 333, 337.

<i>Professional Education Requirements</i>	34
Guidance 305-4; Education Administration 355-4; Secondary Education 315-4, 352-8; 8 hours from the following: Secondary Education 352-4; Business Education 405-4; Instructional Materials 417-4; Guidance 422-4. Two of the following: Business Education 403-3, 404-3, 405-4, 406-4, 408-3	
<i>Electives</i> (hours to total 192)	17
<i>Total</i>	192

SECONDARY CONCENTRATION

Secondary concentrations are offered in the following areas: (1) secretarial studies and office management consisting of a minimum of 24 hours in business; (2) business-teacher education consisting of a minimum of 30 hours in business.

Secondary concentrations are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

CHEMISTRY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, A.C.S., *College of Liberal Arts and Sciences*

A 3.0 average in chemistry courses is required of all who start the second year of the concentration. A 3.25 average in chemistry courses, and/or consent of the chairman, is required before starting the third and fourth years.

The following courses meet requirements for certification by the American Chemical Society. A student should consult the Department of Chemistry for detailed recommendations covering his four years of study and for changes in A.C.S. requirements.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Chemistry</i> (with A.C.S. certification)	107

¹ Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201). Those students starting with a proficiency in shorthand may be excused from as many as 16 hours of shorthand (221 and 324a). Those who have had high school instruction in bookkeeping will start with Accounting 251a.

GSD 114-9 + 126-9	(9) + 9
Chemistry 111-10, 235, 341-15, 411, 432a, 433, 461-12, 444, 446, 461-12, 490	67-69
Chemistry: two of the following, one must be a laboratory course: 412, 432b, 444, 464, 496 or 451-11	7-11
Mathematics 150-10, 252-9	19
Physics (one year)	15
<i>Secondary Concentration</i> (mathematics or physics)	9-10
<i>Total</i>	206-207

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Chemistry</i>	66
GSD 114-9 + 126-9	(9) + 9
Chemistry 111-10, 235, 305-9 or 341-15, 460 or 461-12, and courses selected from 350, 411, 412, 432, 433, 444, 446, 447, 451-11, 464, 471 to complete a minimum of 42 hours in chemistry.	
Mathematics (according to prerequisites of chemistry courses)	
Physics (one year)	15
<i>Secondary Concentration</i>	10-28
<i>Electives</i> (depending on secondary concentration chosen)	0-15
<i>Total</i>	192

SECONDARY CONCENTRATION

A minimum of 24 hours of chemistry is required, including 111-10 and at least one course from each of two of the following fields: analytical chemistry, biological chemistry, organic chemistry. Some acceptable secondary concentrations are 111-15, plus one of the following sequences: 101c (with GSA 101c), 235; or 235, 305-8; or 101c (with GSA 101c), 235, 350; or 101c (with GSA 101c), 230, 350; or 305-8, 350; or 235, 305-8; or 235, 305-8, 350. Another acceptable sequence is 111-10, 230, 305-8, 350.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Chemistry</i>	79-101
GSD FL (German or Russian recommended)	(9)
Chemistry 111-15, 235-5, 375-3	23
Chemistry 305-10 or 341-15, 460-5 or 461-12	15-27
Chemistry Electives	10-20
Mathematics 150-8, 252-8	16
Physics 211-15	15
<i>Secondary Concentration</i>	27

<i>Electives</i> (Math or Physics)	0-4
<i>Total</i>	193-219
<i>Total</i> (if secondary concentration is mathematics)	192-199

A student considering a concentration in chemistry is urged to consult with a representative of the chemistry faculty. In general, one who desires to work or enter graduate school in chemistry must take 341 and 461 and either 336 or 432a or b. One who desires training as a professional chemist as specified by the American Chemical Society must take 341, 411, 432, and 461 (in junior year) plus three advanced courses (one may be mathematics or physics), include 225 hours of lab after 341, and elect German.

BACHELOR OF SCIENCE DEGREE, *Education Division*

A 37-hour concentration for students who elect two secondary concentrations must include Chemistry 111-15, 235-5, 305-10, 375-2, and 460-5. Those who elect only one secondary concentration must add 11 hours including 375-1.

SECONDARY CONCENTRATION

A secondary concentration in chemistry requires 111-15 and at least 12 hours in courses chosen from 235, 366; 311; 240 or 305-10.

COMMUNITY DEVELOPMENT

SECONDARY CONCENTRATION, *Carbondale Campus*

A secondary concentration in community development consists of 24 hours, including Sociology 333, 487a,b, plus 13 additional hours approved by the Community Development Institute. A student intending to concentrate in community development should consult the institute's director.

COMPARATIVE LITERATURE

SECONDARY CONCENTRATION, *Edwardsville Campus*

The secondary concentration in comparative literature is 37 hours, prescribed as follows: 300-12; 310a,b,c; second year of foreign-language on the college level; and 4 hours of electives from 310c,d, philosophy 360 or advanced foreign language study.

DESIGN

CARBONDALE CAMPUS

The purpose of these courses is to prepare students for careers of socially useful problem-solving relative to significant needs of contemporary society. The student learns ways to utilize mental and physical resources to develop and control man's living environment. This, therefore, deals with areas of visual communications and environmental planning. Traditional school stratifications are minimized. Boundary lines are continually crossed as the

student at the undergraduate level works with a variety of problem situations in co-operation with such disciplines as psychology, microbiology, sociology, education.

BACHELOR OF ARTS DEGREE, *School of Fine Arts*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Design</i>	119
GSD 108 or 114	(9)
Design 100-15, 215-12, 275-12	39
Design 200-6, 300-6, 400-6	18
Design 366-15, 375-15, 390-2, 465F-15, 465G-15	62
<i>Total</i>	<u>215</u>

Anyone transferring from another concentration or school will be placed at the proper stage in his course of study after a personal interview. He should be prepared to show examples of previous work.

ECONOMICS

CARBONDALE CAMPUS

The aim of the economics courses is to develop in the student such critical and analytical skills as underlie the ability to understand economic problems and institutions, both in their contemporary and historical setting.

Concentration in economics gives the student a basic understanding of the chief theoretical and institutional branches of the subject as well as the academic background necessary for many positions in industry and labor organizations, for work in the economic branches of government service, for college or university teaching, and for graduate study in economics and business.

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Economics</i>	73
GSB 211a-3, GSD 110-3	(6)
Accounting 251-12	12
Economics 214, 215, 310, 315, 330, 440, 441	26
Economics 408, 416, 429, 432, 450a, 465, 470 (any two)	6
Economics 308; (317 or GSB 311); 411; 431, (481 or GSB 312) (any two)	6
Management 320, 340, 371, 481	16
Marketing 225, 325	7
<i>Electives</i>	<u>23</u>
<i>Total</i>	<u>192</u>

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Economics</i>	38

GSB 211a-3, GSD 110-3	(6)
Economics courses required for Bachelor of Science degree, above	38
<i>Secondary Concentration</i>	24
<i>Electives</i>	34
<i>Total</i>	192

SECONDARY CONCENTRATION

The following courses constitute a 28-hour secondary concentration in economics: GSB 211a, GSD 110, Economics 214, 215, and any four of the following: 310, 315, 330, 440, 441.

EDWARDSVILLE CAMPUS

Courses in economics will help students understand the principles concerning the production and distribution of goods and services. Important but controversial issues, such as depression, inflation, labor unions and business monopoly, tariffs, and government spending, are discussed and analyzed.

Training in economics will prepare an individual for a position in private industry, government service, or teaching. Business and governmental agencies employ economists in management training programs, research, and administrative positions. Economics also provides an excellent background needed for the individual's understanding and evaluation of economic policy of government.

Students interested in economics, as a field of concentration, may pursue a somewhat specialized study in such fields as money and banking, industrial relations, finance, and international trade. The over-all sequence of courses, including those in related areas such as business, education, psychology, mathematics, and government, should be planned in co-operation with an adviser in the Business Division.

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Economics</i>	74-82
GSB 211a-3, 311, or Economics 470, GSD 114d	3 + (9)
Accounting 251-12	12
Economics 210, 308, 315, 440, 441	21
Economics electives of five courses in consultation with adviser	15-20
Management 320, 340, 371	13
Management 479 or 481; Economics 473	8
Marketing 230	5
<i>Electives</i>	31-23
<i>Total</i>	192

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

For this degree the following courses constitute a concentration in Econom-

ics: GSB 211a, 311 or Economics 470, GSD 114d, Economics 210, 315, 440, 441, plus an additional 19 hours of electives in Economics to make a total of 45 hours in concentration of Economics. These electives will be chosen in consultation with an economics faculty adviser. Economics 308 and Accounting 250 (or 251a) are strongly recommended as basic tools courses.

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree the following courses constitute a 48-hour concentration in Economics; GSB 211a, 311, GSD 114d, Economics 210, 315, 440, 441, Marketing 230, plus an additional 13 hours of electives in economics to meet the minimum of 48 hours. The electives will be chosen in consultation with an economics faculty adviser.

The following courses constitute a 36 hour concentration in Economics: GSB 211a, 311, GSD 114d, Economics 210, 315, 440, 441, plus an additional 10 hours of electives in economics to meet the minimum of 36 hours.

SECONDARY CONCENTRATION

Requirements for a secondary concentration in Economics are GSB 211a, 311, GSD 114d, Economics 210, 315, 440, 441 to meet the minimum of 26 hours. The course of study will be planned in consultation with an economics faculty adviser.

ELEMENTARY EDUCATION

Following are the requirements for the Bachelor of Science degree with concentration in elementary education and meeting the minimum requirements for a Standard Elementary School Certificate on either the early childhood level or the elementary level.

CARBONDALE CAMPUS

In addition to general university and College of Education requirements a student must (1) meet all requirements pertaining to prerequisites to student teaching and should study the section in this bulletin which lists such requirements; and (2) have at least 24 hours in each of these three fields: language arts, science, social science.

Everyone in elementary education or early childhood education should plan to have September Experience. September Experience consists of serving as a teacher aide in an elementary school in the student's own home town after the public schools open in the fall and before the University opens. Usually there is an opportunity for a full two weeks' experience in helping in the classroom. Students can sign up for September Experience during the spring quarter in the office of the Department of Elementary Education, which then makes the necessary arrangements.

REQUIREMENTS FOR EARLY CHILDHOOD EDUCATION AND ELEMENTARY EDUCATION

<i>Mathematics—13 hours</i>		<i>Physical and Biological</i>	
GSD 108-9	9	<i>Science—24 hours</i>	
Mathematics 310-4	4	GSA 101-9	9

GSA 201-9, or 201-6 & 200-3	9	and Supervision 355 ²	4
GSA third level courses	6	Guidance 305-4	4
<i>Social Science—27 hours</i>		Elementary Education courses	
GSB 101-9, 201-9	18	for EARLY CHILDHOOD: 309	
American History (GSB 300b,c)	6	-3 (winter only), 316-4,	
GSB 211b-3 or Government		337-4, 350b-16 (student	
300-4	3	teaching), plus electives	40
<i>Language Arts—24 hours</i>		ELEMENTARY: 314-4, 337-4,	
GSC 103-3	3	351-16 (student teaching),	
GSC (any two) 201-3, 202-3,		plus electives	40
203-3, 209-3 or 210-3	6	Recommended electives: Ele-	
GSC (any one) 313-3, 321-3,		mentary Education 100-3,	
335-3, 345-3, 365-3	3	203-3, 413-4, 415-4, 442-4,	
GSD 101-6, 103-3	9	Instructional Materials 417-4,	
English 391, or exemption	3	Guidance 422a.	
<i>Health and Physical Education—</i>		<i>Additional Competencies</i> (early	
<i>10 hours</i>		childhood only)	
GSE 101-1, 102-1, 103-1,		Secretarial and Business Edu-	
111-1, 112-1, or 113d-1	1	cation 241-3 ³	3
GSE 201-3	3	Music 040-3 or pass piano	
PEW or PEM activity	2	performance test	3
PEW 319-4 or PEM 350-4	4	<i>Area of Interest</i> (elementary only)	
<i>Fine Arts—12 hours</i>		Each student must obtain at	
GSC 100-3, 101-3	6	least 12 hours, in addition to the	
Electives: Art 300, 408, Music		above requirements, in one of	
200, 300b ¹ , 307, Industrial		the following areas: mathemat-	
Education 302, 303, Instruc-		ics, science, social science, lan-	
tional Materials 445	6	guage arts (including foreign	
<i>Professional Courses—48 hours</i>		language), fine arts, health &	
Educational Administration		physical education, library sci-	
		ence.	

EDWARDSVILLE CAMPUS

A student in this course of study must (1) meet all requirements pertaining to prerequisites to student teaching and should study the section in his bulletin which lists such requirements; (2) have at least 24 hours in each of these three fields: language arts, natural science, social science; and (3) satisfy the general requirements of the University and of the Education Division.

REQUIREMENTS BASED UPON, OR IN ADDITION TO, STATE MINIMUM REQUIREMENTS

<i>Mathematics—13 hours</i>		Mathematics 310 or Elementary	
GSD 112-9	9	Education 415	4

¹ Before taking 300b, one must either take 200 or pass a music competency examination, which will be scheduled by the Department of Music for the second Saturday of each quarter.

² If GSB 331 has been taken, this is not required.

³ One who cannot pass a speed test of 25 net words per minute must take Secretarial and Business Education 102 before 241.

*Physical and Biological Science—**24 hours*

GSA 101-9 9

GSA 201-9 9

(211 substitutes for 201b, or
201c) GSA 312, 330a,b, or
358a,b 6*Social Science—28 hours*

GSB 101-9 9

GSB 201-9 9

GSB 311, 351a,b, or 359a,b 3

GSB 331 3

American History (GSB
300a,b) 6
or

Government 210 4

Language Arts—27 hours

GSD 101-9 9

GSC 251-9 9

GSC 351-9, 354a,b, 357-9,
363a,b 6

English 391, or equivalent 3

*Health and Physical Education—**10 hours*

GSE 201 3

Elect 3 hours of Physical
Education Activity 3

PEW 350 or PEM 350 4

*Fine Arts and Applied Arts—**12 hours*

GSC 100 3

GSC 101 3

Electives:

Art 300-9; Music 200, 300B, 307

Theater 310-3

*Early Childhood Education**Professional courses—44 hours*

Guidance 305 4

Elementary Education 316 4

Elementary Education 337 4

Educational Administration
355 4

Student Teaching 350d, E ..12-16

Instructional Materials 417 4

Recommended Electives:

Elementary Education 203 3

Elementary Education 413 4

Elementary Education 415 4

Educational Administration
437 4

Elementary Education 442 4

Special Education 428 4

Guidance 422a 4

Additional Competencies:

Music 040 3

*Elementary Education**Professional courses —44 hours*

Guidance 305 4

Elementary Education 314 4

Elementary Education 337 4

Educational Administration
355 4

Instructional Materials 417 4

Elementary Education 351D 8

Recommended Electives:

Elementary Education 203 3

Elementary Education 413 4

Elementary Education 415 4

Educational Administration
437 4

Elementary Education 442 4

Special Education 428 4

Guidance 422a 4

Area of Interest—12 hours

A student shall select an area in which he obtains at least 12 hours in the area in addition to the above requirements. These areas are: Mathematics, Science, Social Science, Language Arts (including Foreign Language), Fine and Applied Arts, Health and P.E., and Library Science.

ENGINEERING**CARBONDALE CAMPUS**

The engineering courses are designed to produce a graduate who understands the basic sciences and knows how to apply them to a broad field of

engineering and scientific activity. This area of concentration includes research, development, creative design, and analytical engineering. The graduate may avail himself of the facts of basic science and engineering in the solution of problems, or he may pursue graduate study in many areas of science and technology.

Engineering entrance requirements are (1) character, attitude, and interest suitable to the responsibilities of the engineering profession, (2) intellectual ability and achievement indicated by satisfactory scholastic work prior to entering engineering school, and (3) completion of at least two years in an approved college or university with minimum of 9 hours in English and speech, 18 in mathematics (analytical geometry, calculus), 15 in physics (mechanics, heat, light, sound, electricity, and magnetism), and 10 in chemistry (general, inorganic).

Students pursuing the course in engineering should have a well-rounded general education in addition to the specific requirements indicated above; thus the committee on admissions suggests that applicants obtain as much exposure to courses in other fields of knowledge as possible. Students who have studied primarily in nonscientific fields are acceptable if they have acquainted themselves well with the contents of pre-engineering courses.

The rest of the college work should be chosen with the object of developing the intellectual talents of the individual, rather than as required preprofessional preparation. The college work should include courses in language and literature, history, and the social studies, or other subjects which may afford the foundation for cultural development. Unless that foundation is laid early, there is the danger that later demands of technical and professional training may lead to its neglect.

PRE-ENGINEERING *See the engineering entrance requirements above*

The pre-engineering course of study below is designed to provide a basic foundation for the professional engineering courses of study with specific emphasis upon the basic sciences, humanities, and social studies.

Entrance requirements and prerequisites to the requirements for the concentration in engineering may total as many as 35 hours in addition to the General Studies requirements. The student should make every effort to satisfy these requirements through advanced standing, proficiency examinations, and waivers. A department chairman may waive the prerequisites to certain advanced courses for students who plan to enter engineering.

<i>Requirements for Pre-Engineering</i>	104
General Studies	45
Chemistry 111b,c	10
Engineering 260-9	9
Mathematics 150a,b, 252a,b	19
Physics 211-15	15
Technology 101a,b	6

BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>Pre-Engineering</i>	104
<i>General Degree Requirements (additional)</i>	26

<i>Requirements for Concentration in Engineering</i>	74
Applied Science 300-5, 450-5, 470-5	15
Engineering 222-3, 300-9, 311-9, 313-6, 331-12, 344-3, 361-4, 370-4, 412-6	56
Elective	3
<i>Total</i>	204

EDWARDSVILLE CAMPUS

Pre-engineering and selected engineering courses are available on the Edwardsville Campus.

ENGINEERING TECHNOLOGY**CARBONDALE CAMPUS**

Engineering Technology is a technical area of study designed to prepare students who can apply engineering principles and procedures to a variety of engineering activities. A concentration of courses in engineering technology may fulfill the educational requirements for professional work in many fields of technology. Students may concentrate their work in a number of areas such as machine design, electronics, hydraulics, heat power, soils and foundations, communications, construction, surveying, and air conditioning, etc.

BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Engineering Technology</i>	105
GSD 114-9	(9)
Engineering 260-9, 300-6, 311-6	21
Engineering Technology 304-9, 318-6, 361-4	19
Mathematics 150a,b, 252a	15
Technology 101-9, 300-9	18
Elective area such as machine design, electronics, hydraulics, heat power, soils and foundations, communications, construction, surveying, air conditioning, transportation, and photogrammetry	41
<i>Total</i>	201

EDWARDSVILLE CAMPUS

Courses to complete the first two years of the bachelor's degree course of study and selected engineering technology courses are available on the Edwardsville Campus.

ENGLISH**CARBONDALE CAMPUS**

The student should consult the chairman as soon as he knows that he will

concentrate in English, and should thereafter have his advance registration approved by the chairman each quarter. Deviations from the generally prescribed requirements should not be made without prior approval. Membership in the English Club is expected.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in English</i>	42
GSC 201 or 210, and 202, GSD FL (preferably French or German)	(15)
English 300, 302-12, 309a, 390	23
One 400-level course in each of the "types." These three courses should be selected so as to fall into three different literary periods. See "types" and "periods" below.	12
English electives numbered above 299 to complete 42 hours in English	7
<i>Secondary Concentration</i>	24
<i>Electives</i>	21
Recommended electives are GSC 300 level English course; English 485; extra courses in types and periods; courses in criticism, linguistics, professional writing.	
<i>Total</i>	192

Types

Poetry: 404a,b; 412a,b,c; 420a,b; 421a,b,c,d; 473
Drama: 460a,b,c,d; 464; 468; 471a,b
Fiction: 412a,b,c; 441; 443; 431 b,c; 454a,b,c; 456; 458a,b; Prose 447, 495a,b

Periods

The Medieval: 404a,b
The Renaissance: 412a; 460a,b; 471a,b
The 17th-18th Centuries: 412b,c; 441; 454a; 460b,c; 473
The 19th Century: 420a; 421a,b,c; 431b,c; 443; 447; 454b; 458a
The 20th Century: 420b; 421d; 454c; 456; 458b; 460d; 464; 468; 495a,b

BACHELOR OF SCIENCE DEGREE, *College of Education*

<i>Requirements for Concentration in English</i>	42
All courses required above for the concentration	35
English 485	4
English electives to complete 48 hours	3

SECONDARY CONCENTRATION

A secondary concentration is 25 hours, prescribed as follows: from sophomore work, 6 hours; 300; 309a; 302a,b or 302b,c; 390. Deviations should have approval of the chairman.

EDWARDSVILLE CAMPUS
BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in English</i>	53
GSD FL	(9)
English 300, 302-12, 309-8, 365, 499-2	30
English electives numbered above 299 (485, 486, 487 do not count.)	14
Foreign language courses to complete 2 years college level work in a language	9
<i>Secondary Concentration</i>	24-27
<i>Electives</i>	16-19
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>Requirements for Concentration in English</i>	48
All courses required above for the concentration except a foreign language	44
English 485	4
The grade of C or above is required in all English courses and General Studies Areas C and D.	

SECONDARY CONCENTRATION

A 24-hour secondary concentration in English consists of 300, 302-12, 309-8.

FOREIGN LANGUAGES

CARBONDALE CAMPUS
BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Foreign Languages</i>	42
A minimum of 42 hours in one language in courses numbered above 200	
<i>Secondary Concentration</i>	24
<i>Electives</i>	30
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

<i>Requirements for Concentration in Foreign-Languages</i>	36
A minimum of 36 hours in one language in courses numbered above 200.	

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours in one language, in courses numbered above 200.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Foreign Languages</i>	48
A minimum of 42 hours beyond the 100-level courses, including the seminar in the field of concentration (French, Spanish, or German).	42
English and History (one course in each area above 299 related to the concentration)	6
<i>Secondary Concentration</i>	24-27
<i>Electives</i>	21-24
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the Foreign Languages Concentration Requirements are 38 hours (exclusive of General Studies courses and elementary education concentration courses) in a language, plus one English and one history course numbered above 299.

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours (exclusive of General Studies) in a language.

FORESTRY

Forestry provides instruction, research, and public service in the disciplines of forest recreation and park management, forest production, and wood utilization. The department's four-year undergraduate course of study leads to a Bachelor of Science degree offering fundamental training to students planning forestry as a professional career.

During the forestry student's freshman and sophomore years at Southern Illinois University his studies are devoted primarily to basic sciences, such as mathematics, chemistry, botany, physics, and zoology; and other cultural-foundational courses, such as English, history, and economics. Most of the professional forestry courses are offered in the junior and seniors years. One spring quarter of practical field courses is required except for the utilization option. During this period students live in the field and pay living expenses involved. By completing his Field experience in the spring, the student is free during all school-year summer quarters to be employed by Federal or other forestry agencies or to accelerate in his academic work.

Available to the Department of Forestry for teaching and research are the following: The Crab Orchard Wildlife Refuge; the Shawnee National Forest; the Union County Tree Nursery and Forest; and the Kaskaskia Experimental Forest comprising several hundred thousand acres of forest land, all in the vicinity of the University. Also available for wood utilization teaching and research is a modern wood products plant located at the Vo-

cational-Technical Institute, east of Carbondale. The Southern Illinois University Experimental Forest and Giant City State Park provide additional facilities for teaching and research, especially during the Spring Camp.

In addition, thirty-four staff members of the U.S. Forest Service's Carbondale Forest Research Center are affiliated with the Department of Forestry and help to enrich the University's forestry program.

BACHELOR OF SCIENCE DEGREE, <i>School of Agriculture</i>		
<i>General Studies Requirements</i> (See Chapter 3.)		96
<i>Requirements for Concentration in Forestry (For Forest Resource Management Option see A; for Forest Recreation and Park Management Option see B)</i>		97-100
	A	B
	61	50
Forestry A: 104, 221, 306, 320, 330, 331, 332, 340, 350, 363a,b, 365a,b, 369, 375, 465, 466, 470a,b		
B: 104, 221, 306, 331, 340, 350, 363a,b, 365a,b, 375, 450, 465, 470a, 471.		
Agriculture Industries A: no courses; B: 214	0	2
Plant Industries A: 301; B: 264, 301, 304	4	11
Electives in School of Agriculture	6-8	6-8
School of Technology A: Engineering Technology 263a; B: Engineering Technology 263a.	4	4
School of Business A: no courses; B: Management 385.	0	4
College of Liberal Arts and Sciences A: Chemistry 101b,c, Botany 320, 457, Zoology 463, Zoology and Botany electives. B: Chemistry 101b,c, Zoology 463, Zoology and Botany electives.	22	13
College of Education A: no courses; B: Recreation 365, 450.	0	8
<i>Electives</i>		8-11
<i>Total</i>		204

GEOGRAPHY

In the field of geography, the student may work toward either a Bachelor of Science degree or a Bachelor of Arts degree depending upon his objective:

1. Bachelor of Science—for preparation to teach geography in the elementary or secondary schools, or (with further preparation) in the junior college; or as a part of preparation to teach either social science or physical science in the elementary or secondary schools.
2. Bachelor of Arts—for a thorough knowledge of geography, in preparation for civil service appointment as a geographer, or for demands of private organizations requiring the services of geographers, meteorologists, cartographers, or planners.

Today a large number of geography students take professional training beyond the bachelor's degree. Schools, colleges, and universities and government and business establishments, as well, are calling for persons with graduate training in geography.

GSB 101a, Geography 302, 304, 306, and 308 make up a three-stage core for training in geography. GSB 101a gives a general survey of the viewpoint of geography. The second stage consists of 302, 304, and 306. Each of these courses gives the "elements" of understanding of a particular aspect of geography that all geographers must know. The third stage is 308. In it the various elements of physical, economic, and cultural geography are tied together, and the methods used by geographers in working with the complex of man-land associations in a particular area are shown. Geography 310 introduces the student to basic techniques used by geographers: maps and quantitative methods. Geography 490 offers the student an opportunity to work intimately with one of the staff members.

One concentrating in geography should complete the core courses before taking other geography courses. After completing the core, the student may choose any other geography courses in assembling the hours required for a concentration. However, his course of study should be approved by a geography adviser.

In physical, economic, and cultural geography there are two advanced sequences each. This is to enable the student wishing to specialize in one of these systematic fields to gain some degree of concentration. Thus, a student interested in one of these specific fields—say, physical geography—may take both sequences in advanced physical geography. A student not interested in such specialization will make his choices from the full range of systematic and regional sequences.

A broad background in other fields is of great importance to a geographer. Thus, it is recommended that geography students hold their hours of geography to the minimum number required and use their elective hours to take work in other areas. Students interested in physical geography should consider work in geology, botany, zoology, plant industries, forestry, and physics. Students interested in economic geography can profit from work in economics, agricultural industries, marketing, and transportation. Students specializing in cultural geography will find courses in sociology, anthropology, community development, history, and government particularly useful. Students interested in the geography of a particular area of the world are encouraged to take courses on the area in other disciplines. Courses of study of the Latin American Institute and the committees on Asian, Russian, and central European studies are particularly noted.

Quantitative methods have become an essential tool used by geographers. Thus, those with a concentration in geography are strongly urged to take work in statistics. Mathematics 220 or Economics 307 provide an introduction, while students interested in more complete preparation may take Mathematics 410a,b, and c.

Students working for a secondary concentration in geography or taking the Social Studies Field concentration in education must take Geography 302, 304, 306, and 308.

CARBONDALE CAMPUSBACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Geography</i>	39
GSB 101a, GSD FL	(12)
Geography 302, 304, 306, 308, 310-6, 490-3	24
Geography electives to complete 42 hours	15
<i>Secondary Concentration</i>	24
<i>Electives</i> ¹	33
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

<i>Requirements for Concentration in Geography</i>	45
GSB 101a (counts toward the concentration), GSD FL	(12)
Geography 302, 304, 306, 308, 310-7, 490-3	24
Geography electives to complete 48 hours (Only 42 hours are required if two 24-hour concentrations are presented; only 36 hours are required if one other 48-hour concentration is presented.) ¹	21

SECONDARY CONCENTRATION

Secondary Concentrations should include the core courses, for together these courses offer the strongest basic preparation in geography.

EDWARDSVILLE CAMPUSBACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Geography Concentration Requirements</i>	45
GSA 330, GSB 101a, GSD FL	(15)
<i>Secondary Concentration</i>	27
<i>Electives</i>	24
<i>Total</i>	192

Areas of Specialization

Cultural, Economic, Physical: 302, 304, 306, 308, 310a.

Planning: 302, 304, 306, 308, 310a, 470a,b,c, and 471.

Cartography: 302, 304, 306, 308, 310a,b, 416a,b, 417, and secondary concentration in mathematics.

The Bachelor of Arts degree cartography specialty may be earned by a Work-Study Plan which permits students to work part time at the St. Louis Aeronautical Chart and Information Center. The General Studies advisement office or the geography staff has complete information on this plan. General Studies courses GSB 101a and GSA 330 are required in the above specializations; one additional General Studies course in geography may be counted.

¹ A background in statistical analysis is recommended.

BACHELOR OF SCIENCE DEGREE, *Education Division*

In addition to the General Studies Requirements and the Education Division Requirements, a geography specialization must include the following courses, GSA 312, 330, GSB 101a, Geography 302, 304, 306, 310a and additional courses to complete 45 or 36 hours in geography (depending on whether the student has one or two secondary concentrations).

SECONDARY CONCENTRATION

A secondary concentration in geography consists of 27 hours and must include 302, 304, 306. Nine hours may be counted from the following: GSA 200, 312, 330, 331, GSB 101a, 351a, and 354.

GEOLOGY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Geology</i>	75
GSD 114-9, FL-9	(9) + 9
Chemistry 111-15	15
Geology 220, 221, 302, 310, 405, 425a, 431	30
Geology 311, 312, 315, 425b, 425c (any 3)	12
Geology electives to complete 50 hours	8
Mathematics 150a	5
Physics	5
<i>Secondary Concentration</i>	24
(Chemistry, mathematics, physics, biology or another area with consent of the chairman)	
<i>Total</i>	195

A summer field course in geology is required and should be taken between the junior and senior years. Additional work in chemistry, mathematics, physics, or biology may be necessary to support specialities.

Preparations for a professional career usually require graduate study.

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours, determined by consultation with the geology adviser.

GOVERNMENT

A concentration in government is recommended for persons planning to teach civics or government courses, and for those planning to qualify for the study of law or for the public service.

CARBONDALE CAMPUS

Government students should take as much work as possible in other social sciences, with at least one secondary concentration in a related field. Stu-

dents planning to take work in government beyond the master's degree should acquire a reading knowledge of both French and German.

It is recommended that government students meet the second-level requirement in GSB by taking 201-9. Such students should then begin their work in government with Government 231 and 232, which are basic courses and prerequisites for many advanced courses. They may, however, take GSB 211-9; in this case they are not permitted to take Government 231 but may take 232.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Government</i>	42
GSD FL-9	(9)
Government 231 (or GSB 211b,c), 232	10
Government electives to total at least 42 hours, preferably according to one of three recommended sequences:	32
305, 360, 379, 380, 462, 471, 472, 495-8, GSB 303, 390, 392	(44)
Specialization in International Affairs: 243, 371, 453, 456, 457, 458, 459, 460, 471, 472, 475, 480, GSB 303, 385, 390	(55)
Specialization in Public Administration: 305, 315, 340, 360, 410, 420, 432, 434, 435, 436, 438, 440, 461, 462, 463, 464, 466, 467, 468, 469, 470, 495	(77)
<i>Secondary Concentration</i>	24
<i>Electives</i>	39
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

Requirements for Concentration in Government include 36 hours selected from the following: Government 231, 232, 243, 305, 315, 330, 360, 371, 379, 380, 420, 466, 467, 472, 495, GSB 385, 390.

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours in government.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Government</i>	45
GSD FL-9	(9)
A minimum of 45 hours including 210 and at least 3 hours in each of the six areas of specialization listed below.	
<i>Secondary Concentration</i>	27
<i>Electives</i>	24
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the Government Concentration Requirements include 45 or 36 hours ((including 210) in government depending on whether the student has one secondary concentration or two. At least 3 hours (but no more than 20 hours) should be taken in each of the areas of specialization listed below.

AREAS OF SPECIALIZATION

American Government and Politics 232, 330, 340, 379, 380, 406, 415, 420, 435.

Comparative Government 390, 453, 456, 458.

International Relations 370, 371, 373, GSB 345.

Political Theory 484, 487, GSB 359a,b.

Public Administration 360, 361, 440, 461, 465, 470, 473.

Public Law 315, 495.

SECONDARY CONCENTRATION

A secondary concentration is 27 hours and must include 210 and at least one course in three of the six areas of specialization listed above.

HEALTH EDUCATION

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *College of Education*

General Studies Requirements (See Chapter 3.) 87

Requirements for Concentration in Health Education

48 hour Concentration, with One Secondary Concentration

Health Education: 205, 300, 311 or 312, 313S, 334S, 350

or 460, 400, 471, 490 39

Microbiology 301 and GSA 301 9

36 hour Concentration with Two Secondary Concentrations

Health Education: 205, 300, 311 or 312, 313S or 334S, 350

or 460, 471, 490 27

Microbiology 301 and GSA 301 9

In addition, the student is urged to secure a total of 35 hours of natural science or, if preferred, to secure a secondary concentration in biology consisting of GSA 201a,b, 301; Botany 300, 301, 313, 449; Zoology 102, 103, and Microbiology 301. Secondary concentrations are suggested in related areas of physical education, home economics, and recreation.

Secondary Concentration and electives 48-60

Total 192

A course of study leading to certification is available to the health education student in elementary or secondary teaching specialties.

SECONDARY CONCENTRATIONS

Required for health education: 205, 300, 311 or 312, 313S or 334S, 350

or 460, and 471. Additional courses may be taken in safety education, school health, community health, and home nursing.

Requirements for safety education: 302S, 313S, 323S, 334S, 443S, 475S, and Instructional Materials 417 or 445. Additional courses may be elected from the following: 415s, 480s, 481s, Industrial Education 465a,b, Psychology 302, 305, 320, and Guidance 305.

EDWARDSVILLE CAMPUS

SECOND TEACHING FIELD

A second teaching field in health education is 27 hours, including 205, 300, 313S, 334S, 350 or 460, 471, Guidance 412 or Psychology 301. Additional courses may be taken in safety education, school health, and community health.

HEALTH SCIENCE

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Health Science</i>	96
GSA 201-9, 301, GSB 201-9, 211-9	(22) + 9
GSD 108-9, 123-9 or 126-9, GSE 201	(12) + 9
Chemistry 111a,b, 305a	14
Government 232, 360, 440	14
Health Education 300, 325, 355, 356	15
Microbiology 301	5
Psychology 305, 307, 432	12
Sociology 335, 336	8
Zoology 102, 103	10
<i>Electives</i>	9
<i>Total</i>	192

Recommended electives for specialization in sanitation: Microbiology 422, 423; Agricultural Industries 303; Animal Industries 231; Government 466; Physics 206-15; Zoology 306 or 316, 310, 406.

Recommended electives for specialization in public health laboratory: Chemistry 235, 451a,b; Government 466; Microbiology 403, 422, 423, 425; Physiology 315c, 433; Zoology 306 or 316.

HISTORY

Students who intend to concentrate in history should consult with a member of the history faculty at the time of registration.

CARBONDALE CAMPUS

Forty-eight hours are required in history. Students should be careful to elect approximately the same number of 400-level as of 300-level hours in history, and care should also be taken to distribute the work in the various

fields of history. One year of acceptable work in a foreign language is required.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in History</i>	36
GSB 101b,c, 300-9 (15 hours count toward the total of 48 hours in history), GSD FL	(21) + 3
History 452	3
History electives to complete 48 hours	30
<i>Secondary Concentration</i>	24
<i>Electives</i>	36
<i>Total</i>	192

SECONDARY CONCENTRATION

Thirty hours are required for a secondary concentration in history, and must include GSB 101b,c, 300. Students in the College of Education should take 12 hours each in the foreign and American fields, plus 6 elective hours of history irrespective of field. The exception to the 30 hour secondary concentration is the field course in Social Science, the members of which need not take more than 24 hours of history.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in History</i>	37
GSB 101b,c, GSB 300-9, GSD FL	(21) + 3
History 100, 452	6
History electives above 299 (Anthropology 304 may be counted) to complete 45 hours (including GSB 101b,c, GSB 300-9) distributed as evenly as possible among Ancient-Medieval-Asiatic, Modern European, and American History	24
Philosophy 200	4
<i>Secondary Concentration</i>	27
<i>Electives</i>	26
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the requirements for concentration in history are 48 hours or 36 hours depending on whether the student has one secondary concentration or two. Requirements for either concentration are 100, 452, GSB 101b,c, GSB 300-9, and Philosophy 200. The remaining portion of the concentration must be on the 300 and 400 levels, and care should be taken to distribute the work as evenly as possible among the three fields of Ancient-Medieval-Asiatic, Modern Europe, and American history. A year of work in a foreign language is required.

SECONDARY CONCENTRATION

Twenty-seven hours are required for a secondary concentration in history and must include 100, GSB 101b,c, GSB 300-9, Anthropology 304 may be counted for a history concentration.

HOME ECONOMICS

The School of Home Economics grants the Bachelor of Science degree in home economics. No secondary concentration is required. The following specializations are offered by the school and the departments indicated:

SPECIALIZATION	DEPARTMENT
Apparel Design	Clothing and Textiles
Clothing and Textiles Merchandising	Clothing and Textiles
Dietetics	Food and Nutrition
Foods in Business	Food and Nutrition
General Home Economics	Home and Family
Home Advisers	Home Economics Education
Institution Management	Food and Nutrition
Interior Design	Clothing and Textiles
Teaching Vocational Homemaking	Home Economics Education

The College of Liberal Arts and Sciences grants the Bachelor of Arts degree in home economics. A minimum of 42 hours in home economics is required. This is for the profession of homemaking rather than for any of the salary-earning professional careers in home economics. The specialization is offered by the Department of Home and Family.

THE HOME ECONOMICS HONORS PROGRAM

An Honors Program in the School of Home Economics provides for the planning of individualized programs for the student with high academic ability.

In selecting freshmen for participation in informal group discussions prior to formal honors study, percentile ranks on the University's entrance examinations, high school records, recommendations from the high school faculty, and the personal interview will be utilized.

For admission into the formal program, the student may apply independently to the Honors Council or may be encouraged by any member of the faculty to apply on the basis of his records and staff recommendations.

Consideration for his selection will include (1) recommendations of the faculty members, (2) cumulative grade point average (At the present time 4.25 is proposed. In addition, special consideration will be given to those with grade point averages of 4.0 to 4.25 who are highly recommended by faculty and are recognized as having high potential by the Honors Council.), (3) a personal interview for measuring other pertinent attributes, such as the student's purpose, intent, and vitality of interest, and (4) percentile ranks on the University's entrance examinations.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Home Economics*
Apparel Design

These courses offer preparation for designing of apparel or allied positions in the wholesale and retail fashion fields through training in textiles, creative design, draping, pattern making, and clothing construction.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Home Economics</i>	87
GSB 201-9	(9)
GSC 101, 102, 103, and a second-level sequence excluding 200 and 211	(18)
Art 341	4
Art history (any course)	3
Chemistry 101b,c	2
Clothing and Textiles 127, 131, 135, 231, 233, 300, 322, 323, 327, 329, 331, 334, 339, 360, 364, 371, 433, 434	59
Food and Nutrition 312	4
Home and Family 227, 237, 331, 341	13
Home Economics Education 306	2
<i>Electives</i>	9
Recommended: Art 100, 245, 385, and art history courses; Cloth- ing and Textiles 251, 395; Home and Family 324, 332; Home Economics Education 111; Journalism 260A, 393.	
<i>Total</i>	192

Clothing and Textiles Merchandising

These courses provide fundamental training for positions as salespeople, buyers, and department managers in department stores and other retail stores dealing with apparel and home furnishings. They include work in marketing, advertising, accounting, journalism, and merchandising, as well as clothing, textiles, and home furnishing. A period of field experience in the area of the student's special interest is provided.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Home Economics</i>	91
GSB 201-9	(9)
GSC 101, 102, 103, and a second-level sequence excluding 200 and 211	(18)
Accounting 250	4
Chemistry 101b,c	2
Clothing and Textiles 127, 131, 135, 231 or 331, 233, 300, 322, 323, 327, 329, 334-3, or 434-4, 339, 360, 364, 371	48
Food and Nutrition	4
Home and Family 227, 237, 331, 341	13
Home Economics Education 306	2
Journalism 370-3 or Marketing 333-4	3
Marketing 225, 325, 332, 337	15

<i>Electives</i>	5
Recommended: Art 385; Clothing and Textiles 251; Home and Family 324, 332; Home Economics Education 111; Journalism 260A, 393	
<i>Total</i>	192

Dietetics

These courses give a strong scientific education to those interested in becoming dietitians in hospitals, college dormitories, industrial plants, health clinics, laboratories, or public health and welfare organizations. They meet the requirements of the American Dietetics Association.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Home Economics</i>	106
GSA 201c, 301, 302, GSB 201-9, 211-9	(18) + 10
GSB 311, and 303 or 312 or 314	(6)
GSC 101, 102, 103, a second-level sequence (excluding 200 and 211), 386, 387	(24)
GSD 108-9	(9)
Accounting 250	4
Chemistry 101b,c, 350	6
Clothing and Textiles 251	3
Food and Nutrition 105, 206, 320, 335, 340, 350, 351, 352a,b, 355, 356, 359	45
Guidance 305	4
Home and Family 227, 237, 331, 332, 341	17
Home Economics Education 307	3
Microbiology 301, 422	10
Psychology 320	4
<i>Total</i>	193

Foods in Business

These courses are for students who desire to enter the business field as home service representatives for utility companies, as demonstrators for manufacturers, or for other educational, experimental, and promotional work with household equipment and foods.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Home Economics</i>	107
GSA 201c, 301, 302, GSB 201-9, 211-9, 311, 303 or 312 or 314, GSC 101, 102, 103, a second-level sequence (excluding 200 and 211), GSD 108-9	(51) + 10
GSC 342 and 348, or 386 and 387	(6)
Accounting 250	4
Chemistry 101b,c, 350	6
Clothing and Textiles 251, 323, 327	8
Food and Nutrition 105, 206, 320, 321, 335, 352a, 356	27
Home and Family 227, 237, 324, 331, 332, 341, 424	23
Home Economics Education 111	2

Journalism 393	3
Marketing 225, 325, 333, 337	15
Microbiology 301	5
Radio-Television 161	4
<i>Total</i>	194

General Home Economics

These courses emphasize the personal development of the student and preparation to carry the responsibilities of homemaking and citizenship.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Home Economics</i>	64
GSA 201c, GSB 201-9, GSD 108-9	(21)
Chemistry 101b,c	2
Clothing and Textiles 127, 131, 135, 233, 323, 327	18
Food and Nutrition 105, 206, 320, 321, 335	19
Home and Family 227, 237, 324, 331, 332, 341, 345, 366	25
<i>Electives</i>	32
Recommended electives: Clothing and Textiles 145, 331, 360; Health Education 310; Home Economics Education 111. For students interested in the Child Development-Family Relations area, these are suggested: Food and Nutrition 359; Guidance 412; Home and Family 456, 466; Psychology 301, 303, 305. For students interested in the Consumer Services area, these are suggested: Clothing and Textiles 322, 339; Food and Nutrition 356; Home Economics Education 370; Home and Family 424, 435; Journalism 331, 369, 370, 391, 393, 397; Radio-Television 161, 257.	

<i>Total</i>	192
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Home Advisers

These courses prepare students for positions as home advisers, 4-H Club agents, and, with further training, extension specialists.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Home Economics</i>	99
GSA 201c, GSB 201-9, 211-9, GSC 101, 102, 103, and a second-level sequence (excluding 200 and 211)	(30) + 9
Clothing and Textiles 127, 131, 135, 233, 323, 327, 360	22
English 391	3
Food and Nutrition 105, 206, 320, 321, 335	19
Health Education 310	4
Home Economics Education 111, 370, 371	13
Home and Family 227, 237, 324, 331, 332, 341, 345	22
Journalism 393	3
Radio-Television 161	4
<i>Electives</i>	6
<i>Total</i>	192

Institution Management

These courses prepare students to fill positions as food service managers for residence halls, hotels, tearooms, school lunchrooms, and industrial or commercial restaurants. They meet the requirements of the National Restaurant Association.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Home Economics</i>	119
GSA 201c, 301, 302, GSB 201-9, 211-9, 311, 303 or 312 or 314, GSC 101, 102, 103, and a second-level sequence (excluding 200 and 211), 386, 387, GSD 108-9	(57) + 10
Accounting 251a,b	8
Chemistry 101b,c, 350	6
Clothing and Textiles 251, 327	6
Food and Nutrition 105, 206, 320, 335, 350, 351, 352a,b, 355, 356, 359, 371	47
Home and Family 227, 237, 331, 332, 341	17
Home Economics Education 307	3
Management 371, 385	8
Microbiology 301, 422	10
Psychology 320	4
<i>Total</i>	206

Interior Design

These courses prepare students for positions on interior decorating staffs of department stores, in consultant capacities in allied fields, and in establishing an interior decorating business. They meet the educational requirements for membership in the American Institute of Interior Designers.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Home Economics</i>	94
GSB 201-9, GSC 101, 102, 103, and a second-level sequence (excluding 200 and 211), GSC 340 and 341 or 342 and GSD 108a	(36)
Art history (one course)	3
Chemistry 101b, 101c	2
Clothing and Textiles 131, 135, 231, 251-3 (or Industrial Education 112-4), 300, 331, 380, 381, 382, 390, 391-15, 394, 395-4	57
Design 100 sec. 3	10
Food and Nutrition 312	4
Home Economics Education 306	2
Home and Family 227, 237, 331, 341	13
Industrial Technology 304a	3
<i>Electives</i>	2

Recommended: Accounting 250; Art 385, 471, 473; Clothing and Textiles 322, 371, 431, 474; Design 250, 260, 390; Home and Family 324, 332; Home Economics Education 111; Journalism

260A, 331, 370, 393; Management 271, 371; Plant Industries 304;
Industrial Technology 316a.

Total 192

Teaching Vocational Homemaking

These courses meet the needs of students desiring to teach home economics in school departments maintained according to the provisions of the federal vocational acts. A vocational Home Economics certificate requires a bachelor's degree in home economics from an institution and in a course of study approved for teacher training by the Vocational Division of the United States Office of Education and by the State Board for Vocational Education. Southern Illinois University is so approved for training teachers of home economics.

General Studies Requirements (See Chapter 3.) 87

Requirements for Concentration in Home Economics 114

GSA 201c, GSB 201-9, 211-9, 331, GSC 101, 102, 103, and a
second-level sequence (excluding 200 and 211) (33) + 9

Clothing and Textiles 127, 131, 135, 233, 323, 327, 360 22

English 391 3

Food and Nutrition 105, 206, 320, 321, 335 19

Guidance 305 4

Health Education 310 4

Home and Family 227, 237, 324, 331, 332, 341, 345 22

Home Economics Education 111, 309, 310 11

Secondary Education 310, 352B-12 16

Required elective (one) Secondary Education 440, 407, Edu-
cational Administration and Supervision 355, Guidance
422a, Instructional Materials 417 3-4

Total 201

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

These courses are planned for the profession of homemaking rather than for any of the salary-earning professional careers in home economics. Electives should be selected for their contribution to the broad cultural background so desirable for homemakers. This plan allows time for specialization in a second field and includes the following *Requirements for the Concentration*:

GSA 201-9 (9)

Clothing and Textiles 131, 135, 323, 327 11

Food and Nutrition 105, 206, 335 12

Home and Family 227, 237, 324, 331, 332, 341 19

SECONDARY CONCENTRATION

A student desiring a secondary concentration in Home Economics must take 24 hours divided among the various areas; the division need not be equal unless the student plans to teach. In that case, too, she should take the spe-

cial methods course in Home Economics Education (309), do one term of supervised student teaching in home economics, and take Home and Family 332, Home Management Residence.

All students with secondary concentrations are encouraged to live in the Home Management House and take Home and Family 332.

Some selections should be made from the following courses in each of the designated areas:

Area 1—Clothing and Textiles 127, 131, 135, 233, 360.

Area 2—Foods and Nutrition 105, 206, 320, 335.

Area 3—Home and Family 227, 327, 331, 332.

Area 4—Clothing and Textiles 323, 327, Home and Family 324, 341.

INDUSTRIAL EDUCATION

Our rapidly expanding technology in recent years has brought about a tremendous need for specialists who are prepared to work with people. These individuals serve as teachers, supervisors, directors, and consultants in the many areas representative of industry and technology.

Nearly every facet of our lives depends on the skillful use of knowledge in the research, development, manufacture, and maintenance of the industrial materials and machines which sustain us. Professionals in the area of industry are charged with the responsibilities of interpreting our technological society through insights, appreciation, and an understanding of the materials, processes, products, working conditions, and new developments in industrial production.

Educational specialists are prepared to work with all levels of school youth and adult programs relating to industry. Those who gain experience and continue graduate work receive special instruction at college and university levels to prepare them to educate others to serve in these professions.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Industrial Education</i>	104
GSD 114-9	(9)
Guidance 305	4
Industrial Education 100-2, 380-9 ¹ , 408-3, 491-3	17
Industrial Technology 312a-3, 320a-4, 322a-3, 327a-3, 343a-3	16
Secondary Education 310-4, 352-12	16
Technology 101a,c, 300-9	15
Elective area. A student has the opportunity to specialize for employment in manual arts therapy, industrial arts, trade and industries, or technical teaching in the public schools, private trade schools, or in technical institutes, colleges, and universities.	36
<i>Total</i>	200

¹ Related courses may be substituted in trades and industries and technical training.

INDUSTRIAL TECHNOLOGY

The complexity of our industrial technology has created an increasing demand for the services of new types of professional workers known as industrial technologists. These are resourceful, creative men trained for proficiency and versatility in the techniques of industrial design and development, production and management, in various technical and liaison areas, and in technical distribution. The services of these men have become increasingly important because they have proven their capabilities and worth by serving effectively on the Technical-Industrial "team" with scientists, engineers, designers, managers, and craftsmen. In so doing, they fulfill an important liaison function, and one for which they are ideally suited by virtue of their technical training and their knowledge and understanding of human relations.

Federal statisticians report that in the present decade the demand for technologists, professional, and related worker groups will exceed that for all other occupational groups. To the industrial technologist, industry daily offers increasingly interesting and rewarding positions, with considerable potential for growth and advancement.

The student preparing himself for entrance into any of the numerous challenging areas of industrial technology must first acquire a comprehensive background of scientific, engineering, and business principles and applications, as well as specialization in at least one area. He must augment this background with a growing ability to utilize this knowledge effectively in making timely decisions and sound judgments. Because he will later be intimately involved with people in his work, the future technologist must acquire proficiency in personal relationships and acquire effective communication skills. He must also broaden his outlook enough to understand the socio-economic trends he observes, especially as they may presage changes in his work.

Industrial technology is a four-year concentration of courses leading to the Bachelor of Science degree and designed to prepare an individual for employment as a technologist in a variety of technological areas.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Industrial Technology</i>	105
GSD 114-9	(9)
Economics 215	(3)
Applied Science 307	5
Engineering Technology 361	4
Industrial Technology 227-6, 235-6, 300-4, 305-3, 306-3, 312-3, 314-3, 318-3, 322-3, 327-3, 337-6, 343-3, 345-3, 465-4	41
Management 380-4, 382-3	7
Psychology 320	4
Technology 101-9, 300-9	18

The student may elect to specialize in areas such as design, distribution and sales, electronics, graphics, metals, plastics, manufacturing, personnel, production, safety, supervision, wood, and others. 26

Total 201

INSTRUCTIONAL MATERIALS

Courses in the utilization and administration of teaching materials are designed to train both audio-visual co-ordinators and librarians to become fully qualified instructional materials specialists who can administer all teaching materials.

SECONDARY CONCENTRATION, *Carbondale*

Persons trained primarily as teachers may qualify for part-time professional service in a school library by completing 24 hours of work in approved courses which are 306, 308, 403, 405, 406, 417.

SECONDARY CONCENTRATION, *Edwardsville*

The Education Division offers a second teaching field in library science to qualify persons trained primarily as teachers for part-time professional service in a school library.

The required courses are 306, 308, 403, 405, 406, and 417 or 420.
Total: 24 hours.

INTER-AMERICAN STUDIES

This course of studies, under the direction of the Latin American Institute, is designed to meet the need for increasing concern with Latin America and the growing interest in the field. It is planned to provide students with a wide general background in the history, geography, economics, languages, and literature of Hispanic America. Special emphasis is placed upon achievement of sufficient knowledge of the Spanish language to make it an effective means of communication. This level of linguistic skill is essential to open the doors of cultural understanding and appreciation of Latin America to non-native speakers. Equal proficiency in Portuguese for those who wish to specialize in Brazilian studies will be sought.

Inter-American studies prepares the student to participate intelligently and effectively in business or government activities in Latin America or relating to Latin America or helps him to choose a field of specialization for research and teaching.

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

General Studies Requirements (See Chapter 3.) 96

Requirements for Concentration in Inter-American Studies 79

GSB 303, 392, GSD FL (15)

Anthropology 305a, 306a	6
Economics 419, 429	8
Foreign Languages: Spanish 201-9, 220-6, 320-6, 333-9	30
Foreign Languages: GSD 135-9, Portuguese ¹	9
Geography 467	7
Government 363, 371	6
History 352a,b, and 3 hours chosen from 352c, 471, 473	9
Philosophy 340; 477 or 478	8
<i>Electives</i>	8
<i>Total</i>	192

Students coming to Southern Illinois University without any foreign language must take GSD 140-9 and Spanish 140-3 as prerequisites to the specified courses in the language. If their special interests demand, they should expect also to take such additional courses as desired in psychology, sociology, economics, or business administration.

JOURNALISM

Journalism courses are designed to give thorough professional training in both theory and practice in a number of fields of journalism. The areas include daily and weekly newspapers, advertising, periodicals, radio and television news, education, agricultural journalism, free lance writing, industrial publications, news agencies, public relations, and research. In addition to courses, professional conferences, field trips, aid to high school newspapers and yearbooks, and extension classes are offered.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Communications*

Journalism students must demonstrate a working knowledge of typewriting, based upon a minimum straight copy rate of thirty words per minute. This proficiency may be demonstrated during the first year either by examination or by enrollment in Secretarial and Business Education 201a for no academic credit.

Students must complete successfully the Undergraduate English Qualifying Examination prior to admission to journalism, or no later than the first quarter of their junior year. Students who complete English 390 with a grade of *C* or higher will be excused from the Undergraduate English Qualifying Examination. (See the calendar of events in the Schedule of Classes for dates of the examination.)

All students' course schedules must be approved by the chairman or his representative.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Journalism</i>	48-51
Journalism 101, 102, 103, 201, 202, 399	16
One of the five specializations below:	11-23
Advertising: 214, 370, 371, 372, 373, 374, 376	23

¹ This course will take the place of or be in addition to GSD 140a,b,c.

Community Newspaper: 265B, 266B, 350, 351, 352, 442	18
Magazine Journalism: 297, 303, 369, 397, 398, 442	18
News and Editorial: 260a, 303, 330, 390, 391, 442	9
Radio-Television Journalism: 303, 442, RT251, 310, 385	
Journalism electives to complete 48 hours	9-21
Recommended journalism electives are 260a, 432, 433 for specialization in advertising; 214, 260a, 330, 370, 371 for community newspaper; 214, 260a, 370 for magazine journalism; 214, 370, 432 for news and editorial; 214, 260a, 370, for radio-television jour- nalism.	
Secretarial and Business Education 201a or demonstrated proficiency in typewriting.	0-3
<i>Electives</i>	54-57
Recommended electives for radio-television journalism are Print- ing and Photography 341a, Radio-Television 261, 273, 274, 355, 361, 369, 373, 374, 393.	
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

Requirements for Concentration in Journalism:

Journalism 101, 102, 103, 201, 202, 303, 390, 421, 422	28
Recommended electives are Journalism 214, 260a, 370, 391.	

SECONDARY CONCENTRATION (*Carbondale or Edwardsville*)

The 24-hour concentration in journalism consists of 103, 201, 202, 340, at Edwardsville, or 442 at Carbondale, English 300, 392, GSC 152, and an elective in journalism.

MANAGEMENT

Courses are offered in these areas of management: general, financial, and personnel management. Students who do not wish to specialize will select the first area. The latter two areas are more restrictive in their requirements. The objective is to provide a broad, general, liberal educational experience rather than a narrow professional training.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Management</i>	80
GSC 201-9, 211a,b, GSD 110	(9) + 9
Accounting 251-12	12
Economics 214, 215	6

Management 320, 340, 361, 371, 380, 473, 479, 481	31
Management: One of the specializations below	15-16
GENERAL: 327, 385, 421, 475	16
FINANCIAL: 323, 327, 421, 475	16
PERSONNEL: 382, 385, 480, 485	15
Marketing 225, 325	7
<i>Electives</i>	25
<i>Total</i>	192

SECONDARY CONCENTRATIONS

A secondary concentration in management with specialization in finance includes 170, 320, 323, 340, 421, Accounting 250. Accounting 251c and Economics 215 are prerequisites to Management 320.

A secondary concentration in management with specialization in general management includes 170, 320, 340, 371, 380, 481, Accounting 250. (Accounting 251c and Economics 215 are prerequisites to Management 320.)

EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Management</i>	84-89
GSB 211a, GSD 114d	(6)
Accounting 251-12	12
Economics 210, 310, 315, & 470 or GSB 311 ....13 + (3) or 16	
Management 170, 271, 320, 340, 361, 371, 372 or 373, 385	32
One of the specializations below:	22-24
GENERAL: Management 327, 380, 421, 473, 479-4, Marketing 334 or 341 or 438	24
FINANCIAL: Management 323, 327, 328, 421, 475, Marketing 334 or 341 or 438	23
PERSONNEL: Management 380, 480, 481, 485, 382-3 or Economics 411-4, GSB 201c	22-23
Marketing 230	5
<i>Electives</i>	21-16
<i>Total</i>	192

SECONDARY CONCENTRATION

Requirements for a 24-hour secondary concentration in management with a specialization in finance include 170, 320, 323, 340, 421. Accounting 251c and Economics 210 are prerequisites to Management 320.

Requirements for a 24-hour secondary concentration in management with a specialization in general business include 170, 320, 340, 371; Marketing 230, Accounting 251c and Economics 210 are prerequisites to Management 320.

MARKETING

CARBONDALE CAMPUS

Marketing consists of the performance of business activities that direct the flow of goods and services from producers to consumers and business users. The list of courses, below, reflects the philosophy that students seeking careers in selling, advertising, transportation, retailing, wholesaling, purchasing, credits, marketing research, and related fields need a balanced program of liberal and professional education.

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Marketing</i>	42
GSB 201-9, 211a,b, GSD 114d	(9) + 9
Accounting 251-12	12
Economics 210, 315, & 470 or GSB 311	9 + (3), or 12
Management 320, 340, 371	13
Marketing 225, 325, 333, 341, 438, 490	23
Marketing electives, chosen by the student	19
<i>Electives</i>	17
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration in marketing includes 225, 325, 333, 337, and courses depending upon specialization: 339 or 401, 341, & Accounting 250 for general marketing, 339, 438, & 463 for sales and advertising, 329, 401, & 336 for retailing, 336, 339, 341, & 349 for industrial marketing.

EDWARDSVILLE CAMPUS

Marketing, which includes all activities concerned with determining and satisfying consumer desires, is rapidly becoming a major function in the business process. Marketing knowledge and techniques provide the tools for developing and distributing goods and services in the dynamic economy of today and the future.

Courses are offered in areas such as sales, advertising, marketing management, transportation, retailing, wholesaling, and market research. Senior-level or graduate courses are offered to prepare the student for specialized positions in marketing management.

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Marketing</i>	83-89
GSB 211a, GSD 114d	(6)
Accounting 251-12	12
Economics 210, 315, & 470 or GSB 311	9 + (3), or 12
Management 170, 320, 340, 361, 371, 373	24

Marketing 230	5
Marketing 331, 335, 338, 339, 349 (any three)	11-12
Marketing 333, 334, 336, 337, 341 (any three)	11-12
Marketing 438-4 or 463-3, 444, 490	11-12
<i>Electives</i>	22-16
<i>Total</i>	192

SECONDARY CONCENTRATION

A 24-hour concentration in marketing includes 230, 444, 490, and one of the four following options: 338, 341, & Accounting 251a for general marketing; 333, 337, & 438 or 463 for sales and advertising; 331, 334, & 338 for retailing; or 336, 339, & 341 for industrial marketing.

MATHEMATICS

CARBONDALE CAMPUS

Students intending to concentrate in mathematics must plan schedules of mathematics courses numbered above 299 with a mathematics adviser.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Mathematics</i>	48
GSD 114-9 or advanced standing	9
GSD FL (French, German, or Russian recommended)	(9)
Mathematics 150-10, 252-9 (A student may by-pass any of these in which he can demonstrate competence.)	19
Mathematics electives numbered above 299, excluding 311 and 410-16, but including three of the following nine sequences: 305-6; 320-6; 335-6; 421-6; 452-6; 458-6; 475-6; 480-7; 480-4, 483. At least one of the three sequences must be on the 400 level; either 320-6 or 421-6 must be included. Mathematics grade must be at least C in courses numbered 150 or above.	24
Physics 211a	5
<i>Secondary Concentration</i>	24
<i>Electives</i> (Physics 211b,c recommended)	24
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

Requirements for Concentration in Mathematics

GSD 114-9 or advanced standing	(9)
GSD FL (French, German, or Russian recommended)	9
Mathematics 150-10, 252-9 (or by-pass)	19
Mathematics electives numbered above 299, excluding 410-16 and 456-6 but including 311 and three of the following nine sequences: 305-6; 320-6; 335-6; 421-6; 452-6; 458-6;	

475-6; 480-7; 480-4, 483. At least one of the three sequences must be on the 400 level; either 320-6 or 421-6 must be included. The recommended sequences are 320-6; 335-6; 458-6 24

Mathematics grade must be at least C in courses numbered 150 or above.

Physics 211a 5

Other requirements are listed under Secondary Education. Mathematics 311 may be substituted for Secondary Education 315.

SECONDARY CONCENTRATION

A secondary concentration in mathematics must include Mathematics 252a and at least 12 hours of courses numbered above 252a other than 410. At least a C is required in all mathematics courses numbered 150 and above. 311 does not count toward a Bachelor of Arts degree in secondary concentration.

EDWARDSVILLE CAMPUS

Anyone considering a concentration in mathematics is urged to consult with a representative of the mathematics faculty.

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Mathematics</i>	55-65
GSD FL (French, German, or Russian recommended)	(9)
Mathematics through 252b	16-26
Mathematics 300-4, 320-6	10
Mathematics 452-6 or 480-7 or two geometry courses above 299	6-8
Mathematics (additional courses above 299 to total 24 hours; total in mathematics 48)	6-16
Recommended for prospective secondary teachers: 311	(3)
Physics 211-15	15
<i>Secondary Concentration</i>	27
<i>Electives</i>	13-25
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, a student with one secondary concentration has the Mathematics Concentration Requirements listed above, including 311 but exclusive of Physics 211b,c, and totaling 48 hours or its equivalent. A student with two secondary concentrations must have 36 hours in approved mathematics courses, including 300, 311, 320a. Physics 211a is required. French, German, or Russian is recommended for the language requirement.

SECONDARY CONCENTRATION

A secondary concentration in mathematics consists of 27 hours and includes

courses through 150b and at least 9 hours selected from courses above 250. Courses numbering 300 and 320 are recommended for prospective teachers.

MICROBIOLOGY

CARBONDALE CAMPUS

Microbiology is a study of micro-organisms. It includes forms, classification, growth and reproduction, heredity, ecology, and effects on man. Such a program prepares one for graduate and eventually research work in governmental or private settings. Some of the specializations available include soil bacteriology, virology, immunology, serology, fermentation, and the testing and production of biological products.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Microbiology</i>	87
GSA 201-9, 5 hours microbiology credit, GSD 114-9, & FL ..	9
Microbiology 301, 302, 403, 425, 426, 441, 451	32
Microbiology electives to complete 48 hours	11
Physics 206-15	75
<i>Secondary Concentration</i>	28
Chemistry 111-15, 235-5, 305-8	28
<i>Electives</i>	10
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration in microbiology consists of 24 hours, to include 301, 302, and other courses determined by the student in consultation with his microbiology adviser.

MUSIC

CARBONDALE CAMPUS

During each academic year, a series of distinguished musicians join the faculty and students for a period of workshops, seminars, and performances. The roster for the past few years has included the following: Carl Weinrich, organist; Ernest and Lory Wallfisch, viola and piano duo; Willi Apel, Louis Cuyler, and Nicholas Slonimsky, musicologists; Joseph Szigeti, violinist; Robert Goldsand, pianist; and Reginald Kell, Clarinetist; and Nadia Boulanger.

In addition, artists from related fields have included Katherine Dunham, dancer; Edith Lutyens Bel Geddes, costume supervisor; and Max Kaplan, musicologist-sociologist.

GENERAL REQUIREMENTS

The requirements for entrance and for graduation as set forth in this bulletin are in accordance with the published regulations of the National Association of Schools of Music, of which the Department of Music is a member.

Each resident music student must maintain a satisfactory membership in either the university band, orchestra, or chorus every quarter he is enrolled at Southern Illinois University, with the exception of the student teaching quarter.

It is required that all students with a concentration in music reserve the ten o'clock hour on Mondays for music convocations and studio recitals.

Bachelor of Music degree students with a concentration in applied music must present a half-recital in their junior year and a full recital in their senior year. Those with a concentration in music education must present a half-recital in their senior year.

A minimum of ten recitals per quarter must be attended by each student concentrating in music; five recitals per quarter for those with a secondary concentration in music. A deficiency in recital attendance for any one year will result in the student's being given a grade of incomplete in his applied music.

Each candidate for the Bachelor of Music degree must pass the proficiency examination in secondary piano. A student with inadequate preparation in piano must elect class piano each quarter his freshman and sophomore years. If he fails to meet the basic piano requirements at the end of the sophomore year, he must continue in class piano without credit until he passes the test. One concentrating in music education must also pass a proficiency test in voice or elect class voice until he can pass the proficiency test. It is the responsibility of each student, with the assistance of his adviser and instructors, to meet these minimum requirements.

BACHELOR OF MUSIC DEGREE, *School of Fine Arts*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Music</i>	114-120
GSC 357-9	(6) + 3
Music (Theory) 105a,b,c; 205a,b,c; 326a,b,c; 441a,b,c	33
Music (Applied) 12 quarters of ensemble	12
Piano proficiency	0-6
One of the specializations listed below ¹	66
APPLIED MUSIC	
Major instrument or voice, 12 quarters ²	48
Additional theory courses	6
Electives in music	12
MUSIC THEORY-COMPOSITION	
Major instrument or voice, 12 quarters	36
Advanced theory-composition courses	12
Electives in music	18
MUSIC HISTORY-LITERATURE	

¹ Before the end of his sophomore year the student should choose an area of specialization. This choice is subject to approval by the faculty adviser and the chairman.

² For students combining this specialization with the prescribed courses for state certification in education, the applied major will be elected for 2 hours per quarter, totaling 24 hours.

Major instrument or voice, 12 quarters	24
Advanced and related courses in music history and literature	18
Electives in music theory	12
Additional electives in music	12
<i>Total</i>	204-210

Music Education

The following requirements may be satisfied in twelve quarters; they meet the requirements for the State Special Teaching Certificate.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Music</i>	85-92

GSC 357-9	(6) + 3
Music (theory) 105a,b,c, 205a,b,c, 326a,b,c or 441a,b,c	27
Music (education) 300A, 305I or V; 309a, 318a,b	12
(Three hours of above counted in Professional Education below)	
Music (applied) 11 quarters of major ensemble and 11 quarters of major instrument or voice	33
Piano proficiency or class	0-6
Voice proficiency or class	0-1
Music: class woodwinds, brass, and strings	6
(2 hours except in major area and one hour of percussion—required of instrumental or combination majors only)	
Music electives to increase specialization in instrumental music (strings, winds, keyboard, brass or percussion) and vocal music (choral, opera, music theater, elementary education)	4
<i>Professional Education Requirements</i> ¹	27
English 391 or proficiency examination	(3)
Guidance 305	4
Secondary Education 310	4
Education Elective	4
Music (Education Methods) 451	3
Secondary Education 352	12
Before a student is approved for student teaching, he must satisfy the course of study and proficiency prerequisites as established by the department of music.	
<i>Total</i>	199-206

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

These courses are for students who wish to specialize in music as part of their general cultural education. They may also be taken as background

¹ As a prerequisite to teaching in the public schools, an individual must pass a test on State Constitution and History. This requirement may be satisfied by successfully completing either GSB 211b or Government 300.

training by those who may plan to pursue advanced studies in such fields as music criticism and aesthetics.

Required courses are 105-12, 205-9, GSC 357-9, applied music courses totaling 12 hours, and electives in music to complete a total of 60 hours.

SECONDARY CONCENTRATION

To complete the secondary concentration in music, the student must satisfy the following requirements: Music 105-12 (4,4,4) Music Theory; GSC 357-9 (3,3,3) Music History and Literature; Music 140-6 (2,2,2), and 240-6 (2,2,2) Private Applied; Music electives 9 hours.

The student must attend a minimum of five campus recitals or concerts per quarter for a total of fifteen events.

Total 42

EDWARDSVILLE CAMPUS

During the academic year, distinguished musicians join the faculty and students for a period of workshops, seminars, and performances. The list of musicians who have appeared includes Sigurd Rashcer, saxophone; Leonard Smith, cornet; Sidney Foster, piano; the Ritter-Allen Duo (violin-piano); Reginald Kell, clarinet; John Barrows, French horn; Vincent Abato, clarinet-saxophone; and Paul Price, percussion.

The Faculty of Music is an Associate Member of the National Association of Schools of Music. The degrees, Bachelor of Music, with concentration in performance, and in Music Education, and the Bachelor of Arts Degree with a concentration in Music are offered.

Detailed requirements in music are stated in a handbook provided by the music faculty.

BACHELOR OF ARTS DEGREE, *Fine Arts Division*

These courses are for students who wish to specialize in music as part of their general cultural education. They may also be taken as background training by those who may plan to pursue advanced studies in music.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Music</i>	51
GSC 255, 357-9, GSD FL	(18) + 3
Music 105-12, 205-9	21
Music performance major (2 hours per quarter)	12
Music major ensemble	6
Music electives	9
<i>Secondary Concentration</i>	24-27
<i>Electives</i>	27-30
<i>Total</i>	192

BACHELOR OF MUSIC DEGREE, *Fine Arts Division*

Music Performance

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Music</i>	111
Music 105-12, 205-9, 309a, 312a, 318a, 326a, 442a	36

Music, private applied (major instrument)	48
Music, major ensemble (1 hour per quarter)	12
Music, class piano or secondary instrument/voice	6
Music, electives	9
<i>Total</i>	198

Students with a concentration in music performance include one year each of French and German. Students in performance specialization other than voice and those with probable future specializations in music theory-composition, music history-literature, or church music, should consult with their adviser as to the sequence to be followed in languages.

Music Education

One year of French or German is recommended for the student with a choral emphasis in music education.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Music</i>	81-90
Music 105-12, 205-9, 309a-3, 318a,b-6, 326a-3	33
Music, private applied (major instrument)	24
Music, major ensemble (1 hour per quarter)	12
Music, class piano and/or secondary instrument/voice	12-21
<i>Professional Education Requirements</i>	28-29
GSB 331	(3)
Music 301-9	9
Guidance 305	4
Elementary Education 351E and Secondary Education 352D	12
Before a student is approved for student teaching, he must satisfy the course of study and proficiency prerequisites as established by the Music faculty.	
Elective education courses to be selected with adviser	4
<i>Total</i>	196-206

SECONDARY CONCENTRATION

A secondary concentration in music includes 105-12, 2 hours of credit per quarter for three quarters in performance major, 6 hours in a major ensemble, GSC 100, 255. Total: 30 hours.

NURSING

Learning experiences in Nursing are approached from the problem solving point of view. Comprehensive health plans and care emerge from applications of knowledge and skill gained from the natural, biological and social sciences and communications courses. The student develops proficiency in the nurse's role as a teacher, working with patients, families, health teams and other individuals and groups interested in health. Emphasis is placed on the need for responsible leadership in nursing. The student is introduced to the health team concept, first as a member, later as a leader in the nurse

team and then as a participant in the interprofessional health planning for care and rehabilitation of individuals in society.

EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Department of Nursing*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Nursing</i>	105
Biological Science 311-5	5
Chemistry 240-4	4
Health Education 355-4	4
Nursing 101-3, 210-2 or F&N 103-4, 301-8, 302-8, 303-3, 325-8, 355-4, 363-23, 375-8, 381-3, 382-6, 384-2	78-80
Philosophy 302-4	4
Physiology 209-4, 300-4	8
Sociology 301-4, 340-4	8
<i>Total</i>	192-195

PHILOSOPHY

CARBONDALE CAMPUS

General Studies courses in philosophy are available at each level for use in partial satisfaction of the requirements in Area C. The prospective philosophy student is advised to elect at least one such course at each of the first two levels.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Philosophy</i>	39
GSC 381, 382, 383, GSD FL	(15) + 3
Philosophy 300, 320, 481a, GSC 386, 387 (Any two)	6
Philosophy electives to complete 45 hours, 3 of which may be selected from philosophy courses in the first two levels of General Studies	30
<i>Secondary Concentration</i>	24
<i>Electives</i>	24
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration in philosophy requires 24 hours, 6 of which may be selected from philosophy courses offered at the first two levels of General Studies and 12 of which should be selected from the courses listed above for the Bachelor of Arts degree.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Philosophy</i>	42

Foreign Languages (equivalent of 2 years)	(9) + 9
Philosophy 381-12 and 490	14-16
attendance at clinics, workshops, conventions, and conferences; reading of	
Philosophy electives, including at least one course in each	
of these categories: epistemology and value theory.	
GSA (or C) 363-6 and three hours of GSC 360-6 may	
be counted among these electives	26-28
<i>Secondary Concentration</i>	24-27
<i>Electives</i>	18-21
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours (exclusive of General Studies), including Philosophy 381-12.

PHOTOGRAPHY

CARBONDALE CAMPUS

These courses give thorough professional training in both theory and practice of photography. Students purchase supplies for most photography courses.

BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Photography</i>	62-64
Art 100-12	10
Printing and Photography 260-12, 303-4, 309a-4, 341-10,	
345-6, 360a-3, 391, 392-3, & additional courses de-	
pending upon specialization:	50-52
309b, & 360b or 360c or 364 for general photography	
309b,c for commercial and illustrative photography	
360b,c, & 364 for publications photography	
<i>Electives</i>	34-36
<i>Total</i>	192

PHYSICAL EDUCATION

These courses are intended to qualify young people for positions as teachers, coaches, or specialists in public and private elementary or secondary schools, colleges, and universities as well as other social agencies which promote physical activity programs. They have been designed to meet the requirements of state departments of education and other agencies which have adopted professional standards.

Complete and integrated experience in teaching physical education and assisting in coaching under qualified supervisors is provided in the cooperating schools of the area. Added experiences are gained through member-

ship in the Physical Education Club; membership in professional associations; participation on intramural teams; assisting in service class testing; professional journals; and working with recreational and school groups in teaching techniques of various activities.

CARBONDALE CAMPUS — MEN
BACHELOR OF SCIENCE DEGREE, College of Education

<i>General Studies Requirements</i> (See Chapter 3.)	93
<i>Requirements for Concentration in Physical Education</i>	52
GSA 301	(3)
Physical Education for Men 100-18, 101, 303, 305, 341, 350, 354, 370, 376, 420, and two sport theory courses	48
Physiology 300	4
<i>Professional Requirements</i> (See page 119, item 4.)	20
<i>Secondary Concentration</i>	24
<i>Electives</i>	4
Recommended are Health Education 460, and Recreation and Outdoor Education 365.	
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration is 40 hours and must include 100-18, 303, 305, 350, 354, 370, 376, Physiology 300, and GSA 301.

CARBONDALE CAMPUS — WOMEN
BACHELOR OF SCIENCE DEGREE, College of Education

<i>General Studies Requirements</i> (See Chapter 3.)	93
<i>Requirements for Concentration in Physical Education</i>	57
Physical Education for Women 113, 114, 211, 212, 222, 224, 228, 242, 244, 303, 304-10, 308, 350, 351, 352, 353, 354, 355	49
Health Education 334, 460	8
<i>Secondary Concentration</i> (Required for Standard Certificate; not re- quired for Standard Special Certificate)	24
<i>Professional Education Courses</i> (See page 119, item 4.)	29
<i>Electives</i>	(13)
GSE 114a,b,d,e,i,m, PEW 317 (3 hours); GSE 113e, PEW 311, 374, 376 (2 hours).	
<i>Total</i>	203

Anyone who transfers from another university and wants to concentrate in physical education for women at the Carbondale Campus must complete a minimum of 15 hours in physical education senior college courses at Southern Illinois University.

SECONDARY CONCENTRATION

A secondary concentration requires 40 hours, selected in consultation with the chairman.

EDWARDSVILLE CAMPUS — MEN

BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Professional Education Requirements</i> (See page 121.)	32
<i>Requirements for Concentration in Physical Education</i>	48
Physical Education (theory) 303, 305, 341, 350, 354, 370, 381, and 420	30
Physical Education for Men (skill) 100a-j, and two hours from any of 100k-o	12
Health Education 334S	4
Electives	2
<i>Second Teaching Field</i>	27
<i>Total</i>	194

SECOND TEACHING FIELD, 30 HOURS

Physical Education (theory) 341, 350, 354, 370, 381, (skill) 100a,b,c,d,e,f,
Health Education 334S, and 2 hours of electives.

EDWARDSVILLE CAMPUS — WOMEN

BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Professional Education Requirements</i> (See page 121.)	32
<i>Requirements for Concentration in Physical Education</i>	49
Physical Education (theory) 303, 305, 321-6, 341, 350, 354, 323-1, 370	29
Physical Education for Women (skill) 100a-m and 3 hours from any 100n-y	16
Health Education 334S	4
<i>Second Teaching Field</i>	27
<i>Total</i>	195

SECOND TEACHING FIELD, 30 HOURS

Physical Education (theory) 341; 350; 354; 321a,b; 323-1, (skill) 100a,b,
d,e,f,g,h,i,j,k,l,t,u, and Health Education 334S.

PHYSICS

A student considering a concentration in physics is urged to consult with
a representative of the physics faculty.

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Physics</i>	89
GSD 114-9 & FL	(9) + 9
Chemistry 111-10	10

Mathematics 150-10, 252-9, 305-6	25
Physics 211-15 (or 206-15 with consent of the department); 301-8, 305-10, 413-8	41
Physics 304, 310, 405, 414, 450 (any three)	13
<i>Secondary Concentration</i>	24
<i>Total</i>	212
<i>Total</i> (if the secondary concentration is mathematics)	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

The Bachelor of Arts degree, above, differs in two respects: No foreign language is required herein, and only two of 304, 310, 405, 414, 450 are required.

SECONDARY CONCENTRATION

A student taking calculus should take: 211 and two of the following: 305a, 310, 413a. A student not taking calculus should take: 206, 300, 310, 312.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Physics</i>	72-98
GSD FL (German or Russian recommended)	(9)
Physics 211-15, 300, 301-8	28
Physics electives, including 4 hours lab, to complete 48 hours	20
Mathematics, 9 hours beyond 252b	9-35
Chemistry 111-15	15
<i>Secondary Concentration</i>	(27)
<i>Electives</i>	7-33
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the Physics Concentration Requirements are as listed above, under Bachelor of Arts degree, except that 6 hours in the history and philosophy of science may be counted toward the physics electives.

A physics concentration for a student with two secondary concentrations must include Physics 211-15, 300, 301-8, 8 additional hours in physics courses above 299, Chemistry 111-15, Mathematics 252-8. German or Russian is recommended as the foreign language.

SECONDARY CONCENTRATION

Includes Physics 211-15, 300, and electives to total 27 hours.

PHYSIOLOGY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
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<i>Requirements for Concentration in Physiology</i>	42-72
GSD FL	(9)
Physiology electives selected in consultation with the chair- man to total at least 42 hours	42
A background of basic courses in chemistry, mathematics, and physics is required. Courses in botany and zoology are recommended.	0-30
<i>Secondary Concentration</i>	24
<i>Electives</i>	0-21
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration in physiology requires a minimum of 24 hours.

EDWARDSVILLE CAMPUS

Persons who wish to take work in Physiology may do so with either a Zoology or Biology concentration.

A secondary concentration in physiology requires 24 hours.

PLANT INDUSTRIES

CARBONDALE CAMPUS

Instruction, research, demonstration, and consultation, both basic and applied, are provided in the areas of production and utilization of fruits, vegetables, grain and forage crops, and ornamentals, and in the field of soils and soil management.

Courses are offered in all phases of intensive and extensive crop production, soil science, soil and water conservation, fertilizers and plant nutrition, weed control, and related subjects.

The student has ample opportunity to select courses in other areas within the School of Agriculture or related fields outside of Agriculture, such as business, and the biological and physical sciences; this enables him to include in his training not only the *how* but the *why* in crop production and utilization.

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Plant Industries</i>	60
(For an AGRICULTURAL SCIENCE option, hours required are in the second column.)	
Plant Industries 103, 264, 309, and others	36 36
Agricultural Industries, Animal Industries, Forestry (work in two departments)	7 7
Electives in Agriculture	17 5
Mathematics, physical sciences, and biological sciences	0 12
<i>Electives</i>	36
<i>Total</i>	192

PRINTING MANAGEMENT

CARBONDALE CAMPUS

The printing management course of study is designed to prepare students to enter the printing field as supervisors, cost estimators, and salesmen.

BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Printing Management</i>	86
GSB 211-9, GSD 108-9	(18)
Accounting 250, 415	8
Economics 214, 215, 310	6
Management 340, 371, 385	12
Marketing 225	3
Printing and Photography 217, 265a, 271a,b, 302, 308a,b, 312, 314, 365, 366, 379a,b,c, 381a,b, 384	57
<i>Electives</i>	6
<i>Total</i>	192

PROFESSIONAL WRITING

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Professional Writing Concentration Requirements</i>	72
English 300-4, 390-3, 392-3, 492-4	14
Journalism 101-3, 201-3, 202-3, 340-3	12
Intermediate Foreign Language	9
Philosophy 240-4, 342-4, 360-4, 484a-4, 484b, or 484c	8
Approved electives in economics, English (at least 7 hours), government, history, journalism (no more than 12 hours), sociology, and speech	29
<i>Secondary Concentration</i>	0
<i>Electives</i>	24
<i>Total</i>	192

PSYCHOLOGY

Undergraduate courses in psychology introduce the student to the methods and findings of the scientific study of human behavior. He is given an opportunity to learn what research has shown about how we perceive, learn, and think; how individuals differ from one another; how the personality develops from infancy to maturity; and how interpersonal factors affect human relations in the home, on the job, and in the community.

The undergraduate concentration in psychology is primarily aimed at

providing broad general education rather than specialized professional training in psychology; to become a professional psychologist the student must usually complete from two to four years of postgraduate study.

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Psychology</i>	40
GSA 301, GSB 201c, GSD FL	(16)
Psychology 211-8	8
Psychology electives including either Group One or Group Two and excluding 323, 420, 432, and 465	32
<i>Group One, For Students Planning Graduate Study:</i> 311; any one of 312, 313, 314; any two of 301, 303, 304, 305, 307, 320, 322; any two of 404, 406, 407, 408, 409, 421, 431, 440, 451, 461, 471; and any two additional courses previously listed.	
<i>Group Two, For Students Planning No Graduate Study:</i> any eight of the courses listed in Group One, including at least three 400-level courses	
<i>Secondary Concentration</i>	24
<i>Electives</i>	32
<i>Total</i>	192

SECONDARY CONCENTRATION

Courses 323, 420, 432, 465, and courses listed above are acceptable for the secondary concentration, which requires 24 hours.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

For this degree, a concentration requires a minimum of 44 hours in psychology. A year of foreign language or the General Studies foreign language requirement is required. Required courses are: GSB 201c, Psychology 211a, 211b, 311, and 314 or Physiology 209. Students planning graduate study should take 312 or 313; and two of 301, 303, 304, 305, 307, 320, 322; any two of 404, 406, 407, 408, 409, 421, 431, 440, 451, 461, 471. Additional courses to complete the concentration can be selected through consultation with the adviser.

Students not planning to pursue graduate work must complete 44 hours, satisfy the foreign language requirement and include within the concentration GSB 201c, 211a, 211b, 311, and either 314 or Physiology 209. In planning the concentration consultation should be held with the adviser.

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, a concentration in psychology requires a minimum of 48 hours in psychology and related courses. This course of study is designed for the student who intends to teach, pursue graduate studies in guidance, school psychology, or in psychology with an educational orientation. If one

plans to teach at the secondary level a second teaching field is recommended. This should be planned in consultation with the Education Division psychology adviser.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Psychology</i>	48
GSB 201c, GSB 331, and GSD first level Math or FL	(15)
Guidance 305	4
Psychology 211a, 211b, 311, and Physiology 209	16
Psychology 301, 303, 305, 307 (any three)	12
Psychology 440, 407, 409	8
Two courses selected from the following: Psychology 312, 313, 314, 320, 404, 406, 408, 431, 437, 440, 451, 461, 465, Special Education 409, 410, 412, 414	8
<i>Professional Education Requirements</i>	(32) 28
Guidance 305 (required by major also)	(4)
Educational Administration 355	4
Secondary Education 315	4
Student Teaching 352d	8-16
Electives: Guidance 422, 426, Psychology 432 or others with adviser's approval	
<i>Secondary Concentration</i> (should be planned as second teaching field) ..	29
<i>Total</i>	192

A secondary concentration in psychology consists of 27 hours and includes GSB 201c, 211a, and 305. For further information and advisement, the psychology adviser should be consulted.

PUBLIC ADMINISTRATION AND PLANNING EDWARDSVILLE CAMPUS

Public Administration and Planning is an interdisciplinary concentration which focuses around the problems of public administration in today's society and emphasizes the basic skills and general educational background needed in preparation for a career in public administration and urban and/or regional planning. Numerous opportunities for graduate training exist in all these fields for which this course of study offers adequate preparation. This concentration offers an excellent medium within the Liberal Arts tradition to get an organized view and understanding of some of the major problems confronting contemporary society.

The combination of hours selected depends on the interest and, to some degree, the previous training of the student. In some cases, selected courses in disciplines other than those suggested may be substituted for the hours recommended. Students should consult with the designated adviser in planning their courses of study.

Course problems upon which students may be working in connection with several of the required courses will wherever feasible be related to research projects being carried on by the Public Administration and Metropolitan Affairs Program.

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Public Administration and Planning</i>	73
Government courses at least 17 hours or Geography courses to yield at least 18 hours. If Geography is chosen as the area for the minimum course hour requirement at least 38 hours will be required in Government. If the minimum hours are selected in Government at least 38 hours will be required in the Geography area. The 470 sequence may be offered for either Government or Geography credit but not both	56 or 55
Geography: 304-4, 306-4, 310a,b-6, 472-4, and 470-14 ..	18 or 32
Government: 232-4, 360-4, 361-3, 465-3, 473-3, and/or 470-14	17 or 31
Economics: 330-4, and 431-3	7
<i>Electives</i>	23
<i>Total</i>	192

RADIO-TELEVISION

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Radio-Television</i>	48
Radio-Television 251, 252, 273, 274, 351, 352, 373/374 (8-12), 393, and electives to total 48 hours	
<i>Secondary Concentration in a Related Area</i>	24
<i>Electives</i>	24
<i>Total</i>	192

Each student with a concentration in Radio-Television must by the end of his sophomore year:

1. Either (a) successfully pass an English Qualifying Examination, or (b) in lieu of such an Examination, achieve a grade of B in both GSD 101 and 102, or (c) a grade of C in English 391, or (d) if the student has a secondary concentration in English, a grade of C in English 390.
2. Either (a) demonstrate proficiency in typing at 30 words per minute by passing a test administered by the Department of Secretarial and Business Education, or (b) pass Secretarial and Business Education 201-A with a grade of B.

RECREATION AND OUTDOOR EDUCATION

CARBONDALE CAMPUS

Each student is expected to choose courses which will give him a broad

background in recreational activities and skills. These courses may be selected from such areas as music and dance, arts and crafts, drama, sports and games, and nature and conservation. He must complete at least 12 hours of field experience in two areas of his interest, have 34 hours of professional recreation courses, and work closely with the department chairman in choosing related courses in other departments of the University.

Graduates are qualified for employment as public recreation administrators, as directors of recreation in youth serving and semi-public organizations, as supervisors of recreational programs for the ill, handicapped, and the retarded, as specialists in camping and outdoor education.

BACHELOR OF SCIENCE DEGREE, *College of Education*

General Studies Requirements (See Chapter 3.) 96

It is recommended that one specializing in recreation for the ill, handicapped, and retarded take GSC 100, 101, 102, 203, 204, and 207.

Requirements for Concentration in Recreation and Outdoor Education 80-95

Recreation and Outdoor Education 100, 201, 202, 220,
230, 301, 302, 310, 315 34

GSB 300 9

English 391 (See Student Teaching Prerequisites) 3

Guidance 305 4

Health Education 334s 4

Music 307 4

One of the three groups of courses listed below: 22-37

PARKS AND OUTDOOR RECREATION 22

Recreation and Outdoor Education 305,
311-6 10

Accounting 250 4

Management 170 4

Mathematics 220 4

COMMUNITY AND AGENCY RECREATION 37

Recreation and Outdoor Education 305-4,
311-4, 312-4, 313-4, 360-4, 365-4 24

Accounting 250 4

Government 232 5

Management 170 4

RECREATION FOR THE ILL, HANDICAPPED, & RETARDED 24

Recreation and Outdoor Education 311-4,
314-12 16

Mathematics 220 4

Psychology 305 4

Students concentrating in recreation are encouraged to obtain the following certificates: American Red Cross First Aid certificate, American Red Cross Life Saving and Water certificate, American Camping Association Campcraft certificate. Other certificates in the activity and instructional areas are also available.

SECONDARY CONCENTRATION

The minimum concentration must include 12 hours of course work (201, 202, 301) and 12 hours of field work (311, 312, 313, 314). In addition, each student should demonstrate proficiency in water safety skills before graduation.

RELIGION

The educated citizen will have some knowledge of the cultural traditions contributing to our Western civilization. A great part of our heritage is directly related to the treasure of knowledge and practices of our religious traditions. Through the religious foundations, credit courses in religion provide an opportunity for every student to enjoy a fuller educational experience. The maximum credit in religion courses accepted toward the bachelor's degree is 15 hours.

SECONDARY CONCENTRATION, *Carbondale*

This secondary concentration consists of 30 hours: 15 hours earned in courses selected from the following list (Group A) offered by the College of Liberal Arts and Sciences; and (Group B) 15 hours earned in courses offered by the various religious foundations. In the second group, courses must be taken in at least two foundations.

Group A courses include GSB 201b, GSC 310, 345, 382, 383, English 438, 473, History 304, 415b, Philosophy 301, 340, Psychology 305, 307, Sociology 333, 340, 351, 450.

The list of Group B courses is found in Chapter 9 under "Religion."

RUSSIAN AND CENTRAL EUROPEAN STUDIES

SECONDARY CONCENTRATION, *Carbondale*

A secondary concentration in area studies with specialization in Russian studies or in Central European studies is offered especially for those students who also work for a concentration in foreign languages: Russian for Russian studies; German, Russian, or French for Central European studies.

For either specialization a minimum of 24 hours must be earned in the chosen field, at least 12 of them in principal courses, the rest by electives. Not more than three courses in any one subject area will be counted toward fulfillment of the requirements. In exceptional cases an elective course may be substituted after consultation with the adviser for the course of study.

Principal courses for the *Russian studies* consist of Economics 460, Geography 464, Government 453, History 372. Electives are GSB 312, Anthropology 305b, 306b, Economics 418, 481, Geography 462, Government 455, History 312, 430.

Principal courses for the *Central European studies* consist of GSB 390, Economics 418, Geography 462, Government 455, History 312, 430. The electives are GSB 312, Anthropology 306b, Economics 460, 481, Geography

464, Government 453, History 372. One reading course or one independent-studies course can be used in fulfillment of the requirements. Each student's list of courses, however, should be approved by the adviser.

SECONDARY EDUCATION

One who is preparing to teach in junior high school, high school, or junior college does not concentrate in secondary education but must concentrate in any of the areas listed below.

CARBONDALE CAMPUS

The Department of Secondary Education concerns itself with the sequences of professional education courses that lead to certification for teaching in the junior high school, the high school, and the junior college. In addition, it advises students concerning areas of academic concentrations.

A student in the College of Education who is preparing to teach in junior high school or high school may select areas of concentration in any of the following:

Agricultural Education	Foreign Languages	Mathematics
Art Education	Geography	Music Education
Biological Sciences	Government	Physical Science
Business Education	Health Education	Physics
Botany ¹	History	Social Studies
Chemistry	Home Economics	Speech
Economics	Industrial Education	Theater ²
English	Journalism	Zoology
English Language Arts		

With the consent of an academic adviser, a secondary concentration may be selected from the following:

Biological Sciences	Health Education	Physical Education
Botany ¹	History	Physics
Business Education	Home Economics Education	Physiology
Chemistry	Industrial Education	Psychology
Driver Education	Instructional Materials	Sociology
Economics	Journalism	Speech
English	Mathematics	Theater
Foreign Languages	Microbiology	Zoology ¹
Geography	Music	
Government	Philosophy	

STANDARD HIGH SCHOOL CERTIFICATE

A student may enter the Secondary Education program of the College of Education by transfer (1) from the General Studies program (provided he has attained 64 quarter hours), (2) from other academic units, or (3)

¹ A student with a concentration in botany or zoology should have a secondary concentration in the other in order to meet certification standards for teaching biology at the high school level.

² In choosing this concentration, the number of hours required is 36; a second concentration of 36 hours must also be chosen; a secondary concentration of 27 hours is also required.

from other institutions. In each case, he is subject to the following requirements.

1. He must meet the requirements related to the state and federal constitutions.

2. There is no general requirement in foreign language in the Department of Secondary Education except in those situations where the student must meet a foreign language requirement as part of his major academic concentration.

3. He must complete one area of concentration of at least 48 hours and a second concentration in a separate area with a sufficient number of hours to meet the teaching requirements for that area. Or he may substitute one area of concentration of 36 hours and two minor areas with a sufficient number of hours to meet the teaching requirements for each. (Certain broad areas including biological sciences, English language arts, physical education, physical sciences, and social studies have special certification requirements. Students electing to work in these areas should adhere closely to the course of study presented through the designated academic adviser.)

4. He must, if working for certification at the secondary level, complete the following sequence of professional education courses, for 29–35 hours.

Guidance 305, Educational Psychology 4

Secondary Education 310–4, History and Principles of Secondary Education; 315–3, High School Methods or Special Methods; 352–12 to 16 Student Teaching 19–23

Select two courses from the following: 6–8

Agricultural Industries 311–3, Adult Education in Agriculture

Art 308–3, Curriculum and Administration

Educational Administration and Supervision 355–4, Philosophy of Education

Guidance 422a–4, Educational Measurements and Statistics

Home Economics Education 310–4, Adult Education and Evaluation

Industrial Education 408–3, Teaching Aids in Technological Education

Instructional Materials 417–4, Audio Visual Methods

Secondary Education 407–4, The Junior High School

Secondary Education 440–3, Teaching Reading in High School

5. He must satisfy the Student Teaching Prerequisites on page 135 of this catalog. Anyone who wishes to qualify for the Standard Special Certificate for grades K through 12 should consult page 120 of this catalog.

A student in an academic unit other than the College of Education who desires to obtain a Standard High School Certificate should follow the teacher preparation program as described in this bulletin.

STANDARD JUNIOR COLLEGE CERTIFICATE

MASTER OF SCIENCE DEGREE, *College of Education*

One who holds a valid teaching certificate at the high school level may qualify for the Standard Junior College Certificate by satisfying the following requirements.

<i>Professional Education Requirements</i>	20
Educational Administration and Supervision 500-4, Higher Education 521g-2, 565-4, Secondary Education 597-3, 598-3	16
One of the following: Educational Administration and Supervision 460-4, Higher Education 511-4, 576-4, 578-4, Secondary Education 508-4	4
<i>Graduate Credit in Area of Undergraduate Concentration</i>	28
<i>Total</i>	48

One who holds no valid teaching certificate at the high school level may qualify for the Standard Junior College Certificate by satisfying the following requirements. His undergraduate work must satisfy state requirements for 63 hours of General Education.

<i>Professional Education Requirements</i>	20
(Courses in parentheses are not for graduate credit and are not totaled.)	
Educational Administration and Supervision 500-4, 554-4, Guidance (305-4), Higher Education 565-4, Secondary Education (315-3), (352-8)	(15) + 12
Two of the following: Educational Administration and Supervision 460-4, Guidance 442-4, Instructional Materials 417-4, Secondary Education 508-4	8
<i>Graduate Credit in Area of Undergraduate Specialization</i>	28
<i>Total Hours of Graduate Credit</i>	48

STANDARD SPECIAL CERTIFICATE

The Standard Special Certificate is valid for four years for teaching the special subject or subjects named on the certificate in grades kindergarten through 14. This certificate may be issued to one who has a bachelor's degree and presents certified evidence of having earned credit as follows:

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Professional Education</i> (Requirements)	29-35
Guidance 305 (Educational Psychology)	4
Secondary Education 315 or Special Methods	3
Educational Administration and Supervision 355	4
Secondary Education 352 and Elementary Education 351	12-16
Two of the following courses:	6-8
Agricultural Industries 311-3	
Art 308-3	
Guidance 422-4	
Home Economics Education 310-4	
Industrial Education 408-3	
Instructional Materials 417-4	
Secondary Education 310-4, 407-4, 440-3	
<i>Area of Specialization</i>	48

<i>Electives</i>	19
<i>Total</i>	192

EDWARDSVILLE CAMPUS

It is assumed that all candidates for the Bachelor of Science degree have made a commitment to professional education. Secondary education concerns itself with courses in professional education, the teaching fields, and general education. Students should apply for acceptance to the teacher education program no later than the sixth quarter.

BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87-96
A student in the Education Division must complete all general education bachelor's degree requirements as listed in this catalog.	
The following must be included:	
GSB 201c-3 General Psychology	
GSB 331-3 The American Educational System	
History 201a-4 History of the United States, or	
Government 210-4 American Government	
<i>Professional Education</i>	32
Guidance 305, Educational Psychology (Prerequisite GSB 201c-3)	4
Educational Administration 355, Philosophy of Education	4
Secondary Education 315, High School Methods (Prerequisite Guidance 305)	4
Secondary Education 352D, Secondary Student Teaching (Prerequisite Secondary Education 315)	8-12
Elementary Education 351D, Elementary Student Teaching *	4
Electives with Secondary Education Approval	12-8
<i>Total</i>	192

TEACHING FIELDS

The first teaching field shall be at least 48 hours, with a second teaching field of sufficient hours to meet the minimum preparation for teaching in the various fields and subjects (the first teaching field and the second teaching field being in different areas), or the student may carry a 36-hour first teaching field with two approved second teaching fields. It is the pol-

* Required for a standard special certificate in addition to Secondary Education 352D.

NOTE: 1. A student must pass an examination on the national and state constitution's principles as required by Illinois Law.

2. No general requirement in foreign language applies to the Bachelor of Science degree in education.

icy of the Education Division that the courses and prerequisites within the first teaching field area be approved by the adviser in that teaching field. Additional elective hours in the first teaching field and the second teaching field are encouraged, with a first teaching field and a second teaching field selected from the following subject fields:

FIELD	HOURS	FIELD	HOURS
Art Education broad teaching field	67	Geography 1st teaching field	48
2nd teaching field	31	2nd teaching field	27
Botany 1st teaching field	48	Government 1st teaching field	48
2nd teaching field	27	2nd teaching field	27
Biological Science 1st teaching field	48	History 1st teaching field	48
2nd teaching field	27	2nd teaching field	27
Business Teacher Education		Mathematics 1st teaching field	48
broad teaching field	73-77	2nd teaching field	27
2nd teaching field	27	Physical Education 1st teaching field	48
Chemistry 1st teaching field	48	2nd teaching field	27
2nd teaching field	27	Physics 1st teaching field	48
English 1st teaching field	48	2nd teaching field	27
2nd teaching field	27	Psychology 1st teaching field	48
Foreign Languages 1st teaching field	48	2nd teaching field	27
2nd teaching field	27	Social Studies broad teaching field	75
General Science and Mathematics		27 hours in history, 24 in govern-	
broad teaching field	84	ment or geography, and 12 hours in	
57 hours in general science: Chemistry		each of two of the following: anthro-	
111-15, 341-4, GSA 201-9, 356-3,		pology, economics, geography or gov-	
Physics 211-15, plus 6 hours related		ernment, sociology.	
earth and health science from General		Sociology 1st teaching field	48
Studies; and 27 hours in mathematics:		2nd teaching field	27
GSD 114-9, Mathematics 150-8, 300-		Speech Education 1st teaching field	48
4, 320-3, plus one other mathematics		Speech 2nd teaching field	27
course above 299.			

EXECUTIVE SECRETARIAL STUDIES

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Secretarial Studies</i>	109
GSB 211a, GSD 110	(6)
Accounting 251-12	12
Economics 214, 215	6
English 300	4
Management 271, 320, 340, 371, 385, 481	24
Marketing 225, 325	7
Secretarial and Business Education ¹ 201-9, 221-12, 241, 304, 324-8, 326, 341, 407, 427	49
<i>Total</i> ¹	197

¹The total hours required for most students will be 192, because they will be able to omit the first two or three courses in beginning shorthand and typewriting as a result of their having taken such courses in high school. Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201a,b,c); those starting with a proficiency in shorthand may in a similar manner be excused from as many as 16 hours of shorthand (221 a,b,c, and 324a).

SECONDARY CONCENTRATION

Secondary concentrations are offered in the following areas: (1) secretarial studies and office management consisting of a minimum of 24 hours in business; (2) business-teacher education consisting of a minimum of 30 hours in business.

Secondary concentrations are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

SMALL BUSINESS MANAGEMENT

CARBONDALE CAMPUS

The School of Business, in co-operation with the Small Business Institute, grants the Bachelor of Science degree with a concentration in small business management.

Each student must designate the particular small business he plans to enter within the areas of manufacturing, distribution, and services by the end of his sophomore year. Courses are then selected from several areas to provide specific knowledge about the designated business and to give a sound management background applicable to all business.

As the student completes his third year of study, much of his basic training is completed. Each student is then given the opportunity to *intern* in his chosen field. This practical experience may be obtained during summer sessions or regular quarters under the supervision of the staff of the Small Business Institute.

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Small Business Management</i>	71
GSB 211a, GSD 110	(6)
Accounting 251-12	12
Economics 214, 215	6
Management 320, 327, 340, 360, 364, 371, 421, 472, 481	38
Marketing 225, 325, 333, 337	5
<i>Electives</i>	25
Some should relate directly to the student's special area.	
<i>Total</i>	192

In addition to the courses listed above, each student must pass an English qualifying examination, taken during his sophomore year.

SOCIOLOGY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Sociology</i>	42
GSB 201-9	(9)

GSD 108-9 (or Mathematics 220-4), FL	(9) or (4) + 9
Sociology 301, 302, 312	2
Sociology electives in courses whose second digit is not 8, to complete 42 hours (counting GSB 201b)	30
<i>Secondary Concentration</i>	24
<i>Elective Courses in College of Liberal Arts & Sciences</i>	30
<i>Total</i>	192

Social Work

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Sociology</i>	42
GSB 201-9 (3 hours count toward the concentration), GSD FL, 108-9 (or Mathematics 220-4)	(18) + 9
Government (2 courses)	5
Sociology 312, 375, 383, 481, 482	19
Sociology electives to complete 42 hours (counting GSB 201b)	23
<i>Secondary Concentration</i>	24
<i>Elective Courses in College of Liberal Arts & Sciences</i>	30
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration in sociology consists of a minimum of 24 hours.

*EDWARDSVILLE CAMPUS*BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Sociology</i>	53
GSD FL	(9)
Anthropology, psychology (one course in each)	8
Sociology 301, 308 (or GSD 114d or Mathematics 410a), 312, 321, 405, 451	23
Sociology electives to complete 45 hours	22
A background course in physical anthropology is also recommended.	
<i>Secondary Concentration</i>	27
<i>Electives</i>	16
<i>Total</i>	192

Social Welfare

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Sociology Concentration Requirements</i>	63
GSD FL	(9)
Anthropology, economics, psychology (one course in each) ..	12
Government (two courses in the area of American national, state, and local government)	9

Sociology 301, 302, 308 (or GSD 114d or Mathematics 410a), 321, 340, 375, 481, 482	31
Sociology electives	11
Secondary Concentration	27
Electives	6
Total	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the Requirements for Concentration in Sociology include 301, 302, 321, 333, 340, 374, and sociology electives to complete 48 or 36 hours depending on whether the student has one or two secondary concentrations. One (but not two) secondary concentration should be in another social science.

SECONDARY CONCENTRATION

A secondary concentration of 27 hours may include GSB 201–9 and 359–6.

SPECIAL EDUCATION

Concentration in special education leads to certification as teachers of specific kinds of exceptional children.

Students who are concentrating in other areas of education may qualify for the above-mentioned special certificate for teachers of exceptional children by taking approximately twenty-four hours of special work. Usually these courses can be taken in place of regular electives, and can be obtained in the junior and senior years. This permits a student (by the time of graduation) to qualify for both his regular teaching certificate and the special certificate.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *College of Education*

Required courses for specialization in teaching the mentally retarded: students in the elementary education area must take Special Education 410b, 413b, 414, and 420b; Psychology 301 or 303 and 412; Guidance 422; Speech Correction 428; 8 hours of student teaching with normal children and 12 hours of student teaching with mentally retarded children. Students in secondary education who wish to qualify for this certification must have the above courses and may need to take additional courses required in the elementary education program but which are not required on the secondary level. These additional courses will need to be worked out on an individual student basis with his adviser.

EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Education Division*

Requirements for a Concentration in Special Education, Educable
Mentally Handicapped

Language Arts	24 hours
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GSC 251-6, GSD 101-6, 103, English 300 or 391, Speech Correction 428, plus elective hours to total 24.

Natural Science24 hours
GSA 101a,b,c, 201a,b,c (GSA 200 substitutes for 201b or 201c), plus 6 hours.

Social Science24 hours
GSB 101a,b,c, 201a,b, plus 8 or 9 hours from History 201 and Government 210 or the General Studies equivalents.

Mathematics9 hours
GSD 112a,b,c, Mathematics 310 or equivalent.

Fine and Applied Arts18 hours
GSC 100 or 101, plus electives to equal 18.

Health and Physical Education10 hours
GSE 201, plus 3 hours in physical education activity; plus Physical Education 350.

General Psychology7 hours
GSB 201c; Psychology 301 or 303

Education31 hours
GSB 331; Elementary Education 314, 337, 351-8, Guidance 305; 412, 422; Instructional Materials 417, Educational Administration 355.

Special Education24 hours
Special Education 410b, 413b, 414, 420b, 428, 481b, 8 hours of student teaching of educable mentally handicapped children.

This course of study fulfills all the requirements for an elementary teaching certificate in Illinois plus a certificate to teach educable mentally handicapped children.

Information relative to course of study leading to a master's degree appears in the Graduate School catalog.

Requirements for Concentration in Special Education, Emotionally Disturbed

Requirements for the Bachelor of Science degree with the concentration in special education, Emotionally Disturbed, are the same as those listed above for Special Education, Educable Mentally handicapped except in the last section entitled *Special Education* where the required courses are as follows:

Special Education 32
Special Education 410a, 413a, 414, 420a, 428, 481a, 8 hours of student teaching of Emotionally Disturbed Children.

This course of study fulfills all the requirements for an elementary teaching certificate in Illinois plus approval to teach emotionally disturbed children.

Information relative to course of study leading to a master's degree appears in the Graduate School bulletin.

Requirements for Concentration in Special Education, Gifted

Requirements for the Bachelor of Science Degree with the concentration in Special Education, Gifted, are the same as those listed above for Special

Education, Educable Mentally Handicapped except in the last section entitled Special Education, where the required courses are as follows:

<i>Special Education</i>	32
Special Education 410c, 413c, 414, 420c, 481c, 8 hours of student teaching of gifted children.	

This course of study fulfills all the requirements for an elementary teaching certificate in Illinois plus approval to teach gifted children.

S P E E C H

C A R B O N D A L E C A M P U S

BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>60 hour concentration in speech</i>	
<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Speech</i>	54
GSC 200, GSD 103	(6)
Speech 102, 201, 202, 205, 209, 300 or 104, 301, 313, 407a, 407b or 417 or 418, 408 and 16 additional hours	54
<i>Electives</i>	39
<i>Total</i>	192

<i>48 hour concentration in speech (requires a secondary concentration)</i>	
<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Speech</i>	42
GSC 200, GSD 103	(6)
Speech 102, 200, 201, 202, 205, 209, 313, 407-4	26
Speech electives	16
<i>Secondary Concentration</i>	24
<i>Electives</i>	30
<i>Total</i>	192

Interpretation

<i>For student obtaining a 60 hour concentration in communications</i>	
<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Speech</i>	57
GSC 200, GSD 103	(6)
English: A course of study of 16 hours of English will be worked out on an individual basis.	
Speech 102 or 313, 104, 202, 209, 309, 323, 301, 408, 434, and any two of 422, 423, 424, (4 hours elective)	43
<i>Electives</i>	6
<i>Total</i>	192

For Students Obtaining a Teaching Certificate with an emphasis in Interpretation

Students taking a teaching degree should follow the teaching course

of study in Speech for the School of Communications with the following adjustments:

1. The 10 hours of electives allowed in this course of study should be taken in Interpretation.
2. The secondary concentration should be the regular English secondary concentration.

Teaching

The following course of study leads to the Bachelor of Science degree with a concentration in speech education in the School of Communications and meets requirements for a state teaching certificate.

This course of study may also lead to a Bachelor of Science degree in the College of Education.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for a Concentration in Speech</i>	48
GSC 200, GSC 203, GSD 103	(9)
Speech 102, 104 or 200, 202, 205, 209-1, 323, 427	23
Theatre 111a or 111b or 111c, 208-1, 402a	8
Radio-TV 367	3
Speech Correction 428	4
Electives in Speech and/or Theatre	10
<i>Related Requirements for the Teaching Concentration</i>	32
Guidance 305 or Psychology 303	4
Education: two courses listed below *	8
Secondary Education 310, 352	16
Speech Methods 406	4
<i>Secondary Concentration</i>	24
One secondary concentration is required in a separate area with a sufficient number of hours to meet the teaching requirements for that area. A secondary concentration in English or social sciences is recommended.	
<i>Total</i>	200

BACHELOR OF ARTS DEGREE, College of Liberal Arts and Sciences

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Speech</i>	42
GSC 200, GSD 103	(6)
Speech 102, 202, 304	10
Speech electives to complete 48 hours	32
<i>Secondary Concentration</i>	24
<i>Electives</i>	30
<i>Total</i>	192

* The Education courses referred to above are Educational Administration and Supervision 355-4, Guidance 422-3, Instructional Materials 417-4, Secondary Education 407-4, 440-3.

SECONDARY CONCENTRATION

A 30-hour secondary concentration in speech should be planned in consultation with the chairman of the department or the director of speech education. Students electing speech as a secondary concentration to a teaching concentration must include Speech 406.

EDWARDSVILLE CAMPUS

Every student who concentrates in speech and theater must participate in the Speech Arts Performance Program for at least three quarters by enrolling in any of the performance courses: Speech 209 or 309 or Theater 208 or 308. He must also present to an examining committee of speech and theater faculty members a special graduation project in his senior year. The committee shall certify the candidate's project only if it meets certain minimum standards of excellence. Normally, this project will take the form of an extensive and thoroughly documented paper to be orally presented and defended. Examples of topics include: the role of public address in the civil rights struggle, a study of an orator of the past or of a famous contemporary speaker, the manifestation of psychological concepts in modern plays, the historical development of the radio and television documentary, or an analytical report on a theory of stuttering. The topics listed are suggestions only; the student with the consent and advice of his adviser, will determine the exact nature of the project and the format of the paper. For example, if he wishes, the student may offer a short play or a public performance. Unlike the Speech Arts Performance Program, in which the students work together, (e.g., in a play, a television production, or on a debate team), the graduation project is to be accomplished by the student *alone*. Seniors must take the initiative early in their senior year for arranging the project with their advisers and for setting the time for its presentation.

Students who choose either a concentration or a secondary concentration in speech and theater must contact the chairman of the speech and theater faculty for the assignment of a faculty adviser.

BACHELOR OF ARTS DEGREE, *Fine Arts Division*
General Speech and Speech Education

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Speech Concentration Requirements</i>	48
GSC 200 or 203, GSD 103, FL (15)	
Speech 102, 104, 200, 202, 205, 209 or 309 or Theater 208 or 308	21
Speech and theater electives in at least three of the following areas: general speech, radio-television, speech correction, theater	27
<i>Secondary Concentration</i>	24
<i>Electives</i>	24
<i>Total</i>	192

Students concentrating in Speech Education must take Speech 406, at least 9 elective credits in English, and meet all other minimum standards for certification as outlined in the Education Division, Edwardsville, section of this catalog.

SECONDARY CONCENTRATION

A 30-hour secondary concentration in speech should be planned in consultation with the chairman of the speech faculty. Students electing speech as a secondary concentration to a teaching concentration must include Speech 406.

SPEECH CORRECTION

CARBONDALE CAMPUS

Speech correction, pathology, and audiology is an area which has as its objective the training of qualified personnel to work with people impaired in either speech or hearing. Positions in this field are available in the public schools, colleges, and universities, and in highly specialized public or private clinics. Experience is obtained through work at the University's Speech and Hearing Clinic, which is one of the participating agencies in the Co-operative Clinical Services. Additional practical experience is available at the University School; a six-week summer camping program in co-operation with the Division of Services for Crippled Children and the Easter Seal Society; the Marion V.A. Hospital and the Anna State Hospital; rehabilitation work sponsored by the Division of Vocational Rehabilitation.

A student in the School of Communications who plans to be a public school speech correctionist in Illinois must meet the following required courses to obtain a Limited State Special Certificate.

1. GSB 202 and Psychology 301; Elementary Education 314 or Speech 340; GSB 331, 337; Guidance 421 or 422; GSD 103 with a minimum grade of C; History 201a or 201b, and/or GSB 212 or Government 300; English 391 or proficiency examination. In addition, the following courses should be taken during the student's professional quarter, when he does his student teaching: GSB 331 and 355 or Instructional Materials 417; Elementary Education 351B (student teaching, 8 hours).

2. Additional courses required for certification are Psychology 412 or 305 or Health Education 312 and Special Education 414 or Special Education 200.

3. Thirty to thirty-eight hours of speech correction.

4. Eight hours in the field of hearing.

5. Two hundred clock hours of supervised case work in a teacher-training center. (The requirement is satisfied by Elementary Education 351B and/or Speech Correction 405.)

The above items 2, 3, 4, 5 are pertinent for those not wishing to be public school speech correctionists.

BACHELOR OF SCIENCE DEGREE, *School of Communications*

The following applies toward certification requirements of the American Speech and Hearing Association.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Speech Correction</i>	62
Guidance 422	4
Psychology 201, 301, 412 or 305	12
Speech Correction 200, 203, or 409, 212, 318, 319, 405-12, 406, 412, 414, 415, 419	46
<i>Electives</i>	28
<i>Total</i>	192

The following meets requirements for a state teaching certificate.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Speech Correction</i>	95-104
Courses listed above	62
GSB 331, GSD 103	6
Elementary Education 314, 337, 351B	20-24
English 391 (or proficiency)	0 or 3
Guidance 305	4
Special Education 200 or 414	2-4
<i>Electives</i>	17-26
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

<i>Requirements for Concentration in Speech Correction</i>	107-117
All requirements listed above	95-104
Administration and Supervision 100	3
History 201 or 202	5
Government 101 or 300	4-5

Other requirements for the degree are given in the College of Education section of this catalog.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Fine Arts Division*

Speech Correction

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Speech Correction Concentration Requirements</i>	55
GSD 103, FL	(12)
Speech 209 or 309 or Theater 208 or 308	3
Speech Correction 104, 200, 203, 212, 318, 319, 405-8, 406, 412, 414, 415, 419	52
<i>Related Requirements for the Concentration</i>	43
GSB 331	(3)
Elementary Education 314, 337, 351B-8	16
English 391 (or proficiency)	3
Guidance 305, 422	8
Psychology 201, 301, 305	12
Special Education 414	4
<i>Total</i>	194

STUDENT TEACHING

CARBONDALE CAMPUS

Supervised student teaching is conducted in co-operating public schools in Southern Illinois and the Chicago City Schools and at Southern Illinois University in the University School. The College of Education requires 12 to 16 hours of student teaching for the Bachelor of Science degree. Students are expected to enroll for the entire 12 to 16 hours during one quarter.

One of the following professional-quarter plans of student teaching must be pursued by the student with the approval of the director of Student Teaching.

ELEMENTARY PROFESSIONAL QUARTER

The student-teaching quarter is devoted to full-time student teaching in an approved off-campus center or in University School. The student teacher earns 16 hours of credit and is expected to participate in the teaching program for the entire school day, following exactly the schedule of his co-operating teacher. The teaching program includes both regular and extra-class activities.

The university consultant calls a meeting of student teachers planning to do elementary student teaching at least one quarter in advance of the student teaching quarter. The purpose of this meeting is to complete plans and answer questions pertaining to the professional quarter.

EARLY-CHILDHOOD EDUCATION PROFESSIONAL QUARTER

The early-childhood education professional quarter is essentially the same as the one described for elementary student teachers with this exception: student teachers in this area teach full time for a quarter in either kindergarten or one of the primary grades. Students must indicate their preference at the time of filing the final application for student teaching.

SECONDARY PROFESSIONAL QUARTER

(Except Vocational Agriculture and Vocational Home Economics)

PLAN A. EIGHT QUARTER HOURS

This professional-quarter plan is designed for those student teachers wishing to meet only state minimum certification requirements.

Student Teaching, Secondary Education 352A—8 hours of credit for student teaching. Additional hours may be earned by registering for courses taught on campus during the evening or on Saturday.

PLAN B. TWELVE QUARTER HOURS

This professional-quarter plan is designed for secondary student teachers in the College of Education and for other student teachers desiring to earn additional hours during any one quarter.

Student Teaching, Secondary Education 352B—12 hours of credit for student teaching. Additional hours may be earned by registering for courses taught on campus during the evening or on Saturday.

PLAN C. SIXTEEN QUARTER HOURS

This professional quarter plan is designed for secondary student teachers in the College of Education and for other student teachers desiring the maximum amount of secondary student teaching offered by Southern Illinois University during any one quarter.

Student Teaching, Secondary Education 352C—16 quarter hours credit for student teaching. This program does not permit additional hours to be earned without the approval of the Professional Quarter Committee.

VOCATIONAL AGRICULTURE PROFESSIONAL QUARTER

A 3.5 grade point average is required before student teaching.

Psychology and education courses required include Psychology 201, Guidance 305, Educational Administration and Supervision 331, 355, and Secondary Education 310.

For the professional quarter the student registers for Agricultural Industries 312a-2, Summer Practice; 309-5, Methods of Teaching Vocational Agriculture; 311-3, Adult Education in Vocational Agriculture; 312b-10, Student Teaching.

Seniors preparing to be teachers of vocational agriculture do their student teaching in a professional quarter. The first five to six weeks of the quarter are devoted to an intensive study of methods, including both methods of teaching vocational agriculture in high school and adult education in agriculture. The last six weeks of the quarter are given to supervised teaching in an approved off-campus center.

In addition, all prospective teachers of vocational agriculture do two weeks of summer practice at the center where they later will student teach. This summer practice includes the week prior to and the first week of school. A combination handbook and workbook is provided each student for directed experiences. Altogether the student has eight weeks of practice experience.

The student is responsible for transportation to and from the center and also housing. It is recommended but not mandatory that the student teacher reside in the community while teaching. He is expected to remain on duty as long as the supervising teacher requires. He makes necessary visits after school hours to the homes of students to observe supervised farming programs. This may be true also for Saturday mornings. The student teacher is expected to attend all evening meetings such as the FFA, PTA, and adult farmer classes.

When the student teacher uses his personal car in visiting and supervising the vocational agriculture student's farming program, he records his mileage on appropriate forms provided by the supervising teacher and is reimbursed at the same rate as the supervising teacher by the local board of education.

VOCATIONAL HOME ECONOMICS PROFESSIONAL QUARTER

A professional-quarter student preparing to teach home economics should register for Secondary Education 352B-12, Home Economics Edu-

cation 310-3, 311-2. (During the transition period those students who have earned credit for 311 may register for 572-2, Special Problems.)

For three-fourths of the quarter (approximately 9 weeks), the student does full-time student teaching in an approved off-campus center. During the first week of the quarter, the student reports for pre-student-teaching day and to the Department of Home Economics Education for intensive work in the courses listed above. Likewise, at the end of the off-campus student-teaching period the student reports for the remainder of the quarter including the examination period to the Department of Home Economics Education for further intensive work in the evaluation of student teaching.

In the off-campus student-teaching centers, students are assisted in locating housing by the university supervisors of home economics education and the local public school teacher. Students who live in University Housing should indicate to the co-ordinator of housing the time when they will be off-campus for student teaching and/or Home Management House residence so that adjustments in contracts can be made. Students living in housing other than university housing should make arrangements directly with those involved.

The Department of Home Economics Education calls a meeting of students planning to do student teaching at least one quarter in advance of the student teaching period to plan for the professional quarter.

THE PROFESSIONAL QUARTER COMMITTEE

A representative from the College of Education, College of Liberal Arts and Sciences, School of Business, School of Fine Arts, School of Communications, School of Agriculture, School of Home Economics, and School of Technology serve on the Professional Quarter Committee. The purposes of this committee are as follows:

1. To recommend to the director of Student Teaching regulations and procedures applying to all student teachers working on the professional quarter plan.
2. To review petitions for special student teaching consideration where a student feels that he is an exception to the rules and regulations pertaining to the professional quarter. In most cases final reviewing is made from a written request form known as the Petition for Special Student Teaching Consideration. However, the committee as a whole feels that students should not be denied an opportunity of presenting their own cases in person to the committee.
3. To afford each college and school that is concerned with student teaching a personal representative.

No student may pursue a student teaching assignment other than one described previously under one of several professional-quarter plans, unless approved by the Professional Quarter Committee. To request such approval, the student must complete the forms known as the Petition for Special Student Teaching Consideration. These forms may be secured from the office of the director of Student Teaching, Room 135, Wham Education Building. Petitions will be accepted for review by the Professional Quarter Committee no later than the end of the second week of the quarter preceding the stu-

dent teaching quarter. However, petitions may be filed as early as the filing of the final application for student teaching.

Since student teaching is designed in terms of the needs of beginning teachers for complete and integrated experience, and since more than one supervisor may be in charge of the work done by the student teacher, no part of the work may be dropped by the student teacher with the expectation of continuing the remainder of the work for credit. Furthermore, if one supervisor finds it necessary to drop a student teacher from a part of the program, the College of Education reserves the right to require such student teacher to drop all of his program of assigned student teaching rather than merely a part of it.

Two applications are necessary for student teaching. The preliminary or first application must be made during the first six weeks of the winter quarter, approximately one year prior to graduation. Students are scheduled for either fall, winter, or spring quarter of the following year on the basis of information given on the preliminary application. A final, detailed, application blank must be filed prior to the quarter the student is scheduled for student teaching. A student scheduled to do student teaching during the fall or winter quarter should file his final application during the first two weeks of the preceding spring quarter. A student scheduled for student teaching during the spring quarter should file his final application during the first two weeks of the preceding fall quarter.

Application for student teaching by in-service teachers for the summer sessions should be made not later than March 1. Application blanks may be secured from the office of the director of Student Teaching.

STUDENT TEACHING PREREQUISITES

1. Preliminary application should be made to the director of Student Teaching during the winter quarter of the academic year prior to graduation.

2. A final, detailed application form must be completed two quarters prior to the student teaching assignment.

3. The student must have 128 hours of credit with a 3.2 average before beginning work in student teaching.

4. The student is responsible for having transcripts of credit earned at colleges or universities other than Southern Illinois University on file in the office of the director of Student Teaching.

5. The student in secondary education must have at least 16 hours of credit in each subject which he proposes to teach. The major areas of concentration are listed under Secondary Education elsewhere in the catalog.

6. Each student must have at least 12 hours in professional education courses prior to doing student teaching. One preparing to teach in junior or senior high school must have had general psychology, educational or adolescent psychology, high school methods or a special methods course in his public school teaching subject area, and Secondary Education 310. One preparing to teach in the elementary school must have had general psychology, educational or child psychology, reading methods, and elementary methods. An early-childhood education concentration must have had gen-

eral psychology, educational or child psychology, reading methods, and kindergarten-primary methods. He must also be approved in class piano and must have had typewriting and duplicating courses or passed a proficiency exam in both.

7. A student with a concentration or secondary concentration in English must have completed English 300, securing a grade of *C* or better. Other students must have completed English 391, securing a grade of *C* or better. One may pass the undergraduate English Qualifying Examination in lieu of English 391. An undergraduate student with a *B* average (4.0) or better in English Composition (English 101, 102, 103 or GSD 100, 101, 102, or their equivalent) may be waived from the Undergraduate English Qualifying Examination requirement.

8. The student must have at least one quarter of residence credit at Southern Illinois University, earning a minimum of 16 hours of credit, prior to any student teaching assignment.

9. The student must pass satisfactorily a physical examination prior to doing student teaching. The examination is given at the University Health Service.

EDWARDSVILLE CAMPUS

Supervised student teaching is conducted in cooperating public schools in and near the Edwardsville campus. At least eight quarter hours' credit in student teaching is essential for certification and graduation. As many as sixteen hours' credit may be taken at either the elementary or secondary level.

Application for student teaching should be completed at least two quarters prior to enrollment in the program. The necessary forms are available at the Student Teaching office.

The student is responsible to schedule his work so that a half day is cleared for each eight hours' credit in student teaching.

PREREQUISITES

The student teacher should meet the following requirements prior to enrollment in student teaching:

1. At least 144 quarter hours with a *C* average.
2. Satisfactory completion of GSD 103 or an equivalent public speaking course.
3. One quarter of residence at the Edwardsville Campus or completion of a minimum of 15 hours.
4. Conference with and approval of adviser in teaching field and adviser in professional education.
5. The state of Illinois requires that all students doing student teaching take a physical examination including a tuberculin test or a chest X-ray. Forms for these examinations can be obtained from the University Health Service office and should be returned to the same office at least *two months prior* to the student entering the public school classroom.

SECONDARY

1. At least 24 quarter hours in teaching field.

2. At least 11 quarter hours in professional education courses prior to enrollment in student teaching. It is recommended that Secondary Education 315 be taken the quarter prior to student teaching.

ELEMENTARY

1. Guidance 305 and Elementary Education 314 and 337. At least 24 quarter hours recommended.

EARLY CHILDHOOD

1. Meet elementary requirements with exception of Elementary Education 316 instead of 314.

2. Additional 4 hours of student teaching at the kindergarten level.

3. Three terms of Music 010e or pass proficiency in piano.

SPECIAL EDUCATION

1. Meet elementary requirements.

2. Additional courses: Special Education 410 and 413.

3. Eight quarter hours of student teaching in elementary education.

THEATER

CARBONDALE CAMPUS

Instruction and training in all phases of dramatic production for the stage and in basic techniques for dramatic production in television, radio, and motion pictures are provided.

Education for dramatic production entails (1) training and practice in acting, directing, and technical production (stage management, crew work, the planning and execution of costumes, lighting, and scenery); (2) understanding of the essential nature of theater art through study of theater esthetics, history, and criticism; (3) a survey of theater management practices; (4) a knowledge of dramatic literature.

The courses are designed to achieve the following objectives: (1) to teach the theory and practice of play production; (2) to provide a foundation for graduate study, in dramatic production, theory, and history; (3) to provide basic professional training in all phases of dramatic production for stage, screen, radio, and television; (4) to provide the general college student with opportunities to participate on an extracurricular basis in a co-operative artistic enterprise, and with courses which will contribute to a broad liberal arts education; (5) to provide the student of general speech with training and experience in an important type of speech activity; (6) to provide campus, city, and area with live theater performances of the best plays, including children's plays and operas, of past and present; (7) to permit students some degree of specialization in any one of four areas of dramatic production: acting and directing; scenic and costume design; playwriting and dramatic literature; theater history, theory, and esthetics.

The Southern Players, under the supervision of the theater faculty, produce each school year five three-act plays, three plays for children, programs of original one-acts. Each fall the Touring Theater, a troupe composed of students registered in 322 tours Southern Illinois for several weeks,

<i>Secondary Concentration Requirements</i>	24
<i>Electives</i>	24
Art 100, Philosophy 360, English 365, 460, 468, 471 are recommended	
<i>Total</i>	192

ZOOLOGY

Students planning to concentrate in zoology should consult with the zoology faculty representatives.

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Zoology</i>	69.5–73.5
GSA 201–9 (4.5 hours count toward the 48-hour concentration), GSD FL (Recommended French, German, or Russian)	(18)
Botany or physics (one year)	11–15
Chemistry 111–15	15
Zoology 102, 103, 202, 300, 310, 382–1.5, 401	31.5
Zoology electives to complete 48 hours, which may include GSA 312, 313, and 315	12
<i>Electives</i>	7.5–11.5
Recommended: three additional quarters of the foreign language elected, two of mathematics, one of physiology, one of microbiology, and organic chemistry	
<i>Secondary Concentration</i>	24
<i>Total</i>	192

One who desires a concentration in zoology is expected to register consecutively in Zoology 102, 103, 202, and 300.

Zoology students who expect to enter such professions as teaching, fish and wildlife management, dentistry, medicine, veterinary medicine, or allied fields should consult with the zoology adviser concerning their course of study.

SECONDARY CONCENTRATION

A secondary concentration in zoology consists of at least 24 hours, including GSA 201–9 (which contributes only 4.5 hours); Zoology 102, 103; and at least one laboratory course numbered above 199. GSA 312, 313, 314, 315 may be counted toward the 24-hour minimum.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Zoology</i>	69

GSA 201a,c, GSD FL	(15)
Chemistry 111-15	15
Physics (GSA 101a,b may be used for credit)	6
Zoology 102, 103, 202, 300, 382-1.5, 401	26
Electives above 300 in zoology and physiology to complete at least 48 hours including one field course and one physiology course	22
<i>Secondary Concentration</i>	27
<i>Electives</i>	9
Recommended: organic chemistry, three quarters of physics, three of botany, and three of mathematics	
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree in the Education Division, the Zoology Concentration Requirements are as listed above, under Bachelor of Arts degree.

BACHELOR OF SCIENCE DEGREE, *Science and Technology Division*

Students planning to become medical technologists should consult with an appropriate faculty representative.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Zoology</i> (Medical Technology) ..	54
GSA 201a,c, GSD 114-9	(15)
Physics (GSA 101a,b may be used for credit)	6
Zoology 102, 103, 202, 300, 382-1.5, 401	26
Electives above 300 in physiology and zoology to complete 48 hours, including one field course and one physiology course	22
<i>Secondary Concentration</i>	27
Chemistry 111-15, 336-8, and organic chemistry	
<i>Electives</i>	24
<i>Medical Technology</i> (one year at an affiliated Medical Technology School)	(48)
<i>Total</i>	192

Upon successful completion of the year of study and laboratory work at a school of medical technology affiliated with the Science and Technology Division, the student will usually be credited with 48 hours towards the Bachelor of Science degree (of which 16 will count towards the 64 quarter hours of senior college credit needed for graduation). These hours may be used for hours indicated above in Elective (general) and Electives above 300 in physiology and zoology.

Schools of medical technology approved by the Council on Medical Education and Hospitals of the American Medical Association require for entrance completion of three years (135 quarter hours) from an accredited college or university, with credit for 24 hours in biological science and 24 in chemistry. Students successfully completing the year of study and labora-

tory training at an approved school of medical technology are eligible to take the national registry examination conducted by the Board of Registry of Medical Technology for certification as a registered technologist MT (ASCP).

SECONDARY CONCENTRATION

The minimum zoology secondary concentration is 27 hours including 102, 103 and electives in physiology and zoology.

Course Descriptions

9

Here are described all of the courses offered by the University for credit toward a bachelor's, master's, or doctor's degree. (Associate degree courses and certificate courses offered by the Vocational-Technical Institute are described in the Division of Technical and Adult Education catalog.) Courses are listed *numerically* within each subject-matter area. Areas are listed below in the order of their appearance on the following pages.

General Studies Area A	Geography
General Studies Area B	Geology
General Studies Area C	Government
General Studies Area D	Guidance
General Studies Area E	Health Education
Accounting	Higher Education
Aerospace Studies	History
Agricultural Industries	Home and Family
American Studies	Home Economics Education
Animal Industries	Humanities
Anthropology	Industrial Education
Applied Science	Industrial Technology
Art	Instructional Materials
Astronomy	Journalism
Botany	Management
Chemistry	Marketing
Clothing and Textiles	Mathematics
Comparative Literature	Microbiology
Design	Music
Economics	Nursing
Education	Philosophy
Administration	Physical Education—Men
Elementary	Physical Education—Women
Secondary	Physics
Special	Physiology
Engineering	Plan "A"
Engineering Technology	Plant Industries
English	Printing and Photography
Food and Nutrition	Psychology
Forestry	Radio and Television
Foreign Languages	Recreation and Outdoor Education
French	Religion
German	Secretarial and Business Education
Greek	Sociology
Latin	Speech
Romance Philology	Speech Correction
Russian	Technology
Spanish	Theater
Freshman Convocation	Zoology

The first entry for each course is a three-digit numeral which, together with the subject area, serves to identify the course. The first digit indicates

that the course is for freshmen, sophomores, juniors, seniors, or graduate students only, depending on whether the digit is 1, 2, 3, 4, or 5, respectively.

Following the identification number are a dash and another number, which indicates the maximum credit allowed for the course. The maximum may be variable, such as Art 401-2 to 12. Some courses do not terminate at the end of one quarter, as evidenced by two or more numerals in parentheses indicating the credit allowed for each quarter of participation in the course, such as GSA 101-9 (3,3,3).

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites.

The final entry for each course is a letter or no letter. The letter *C* means that the course is available only on the Carbondale Campus. Similarly, the letter *E* means Edwardsville Campus only. The absence of any letter means that the course is offered at both campuses. However, not all of the courses described here are offered every quarter or even every year. To find out when and where a course is to be offered, consult the Schedule of Classes, which may be obtained from Central Publications, Southern Illinois University, Carbondale, Illinois 62903. When requesting a schedule, please specify *campus* (Carbondale or Edwardsville) and *quarter* (fall, winter, spring, or summer).

For example, GSA 101-9 (3,3,3) is offered at both campuses for a total of 9 hours of credit. The course runs for three quarters at 3 hours per quarter. First a student takes 101a-3, then he takes 101b-3, and finally he completes the course by taking 101c-3.

MAN'S PHYSICAL ENVIRONMENT AND BIOLOGICAL INHERITANCE (GSA)

101-9 (3,3,3) Introduction to Physical Science. The basic physical and chemical principles necessary to understand energy, and the properties and behavior of matter. Must be taken in a,b,c sequence. Prerequisite: Mathematics 106 or satisfactory score on placement test.

200-3 Earth Science. A study of the earth: the materials which compose it, its various surface formations, the processes which change it, its relationship to the sun, and its mapping. No second level prerequisites. May be taken in lieu of one part of 201.

201-9 (3,3,3) Man's Biological Inheritance. The fundamentals of biological science: the cell, inheritance, evolution, the diversity of living organisms, and the structure and function of higher animals and plants. Must be taken in a,b,c sequence, with these exceptions: Carbondale students may take either 200, 201a, and 201b or 201a, 201b, and 200; Edwardsville students may take either 201a, 200, and 201c or 201a, 201b, and 200. Prerequisite: 101c (C); high school chemistry or Chemistry 111 (E).

301-4 Principles of Physiology. A comprehensive introductory analysis of the functional machinery of the human body. C

302-3 Psychobiological Foundations of Behavior. A study of the behavioral characteristics of living organisms, especially those of mammals and man. C

312-3 Conservation of Natural Resources. A study of man's use and misuse of natural environment.

313-3 Evolution. Principles and processes of the evolution of living things, including man. Prerequisite: one year of biology. C

314-3 Man's Genetic Heritage. Principles of heredity as related to man, with emphasis on the effects of environment on his biological inheritance. C

- 315-3 History of Biology.** The inter-relationships between the development of biological knowledge and the history of mankind. C
- 321-3 Introduction to Paleontology.** A study of the record of fossil plants and animals and the application of biological and geological principles to the development of theories regarding their origin, evolution, distribution, and extinction. C
- 330-3 Weather.** A study of weather elements basic to understanding the various atmospheric happenings, with application to agriculture, industry, recreational resources, etc. Students may take only 330 or 331 for General Studies credit.
- 331-3 Climate.** Description and interpretation of climatic regions and their influence on human activity. Students may take only 330 or 331 for General Studies credit.
- 340-3 Ecology.** A consideration of ecological principles with emphasis upon examples relating to vegetation. C
- 345-3 Economic Botany.** The study of man's dependence upon plants, domestication, production, consumption, crop ecology, possible new uses of plants. C
- 356-3 Astronomy.** The earth, moon, solar system, galaxy, and universe. A first course, largely descriptive, but relating behavior of celestial bodies to fundamental physical laws. Prerequisite: GSA-1 or Physics 211a. E
- 358-6 (3,3) Analysis of Physical Systems.** Quantitative applications of the principles of classical and modern physics. Prerequisite: GSA-1 or 211a, GSD 114-9. Not open to student who have taken college physics.
- 361-3 Physics of Music and Acoustics.** Nature, propagation, sources, and receptors of sound; acoustic phenomena; physics of musical instruments; mathematics of music; ears and hearing; physiology and psychology; transmission, storage, and reproduction. E
- 363-6 (3,3) Philosophy of Science.** (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. May be taken in a,b or b,a sequence, but a,b is preferable.

MAN'S SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES (GSB)

- 101-9 (3,3,3) Survey of Western Tradition.** (a) A general survey of the geographic setting in which Western civilization developed. Physical, economic, and historical geography of past and present Europe. (b) A general survey of the political, economic, social, and intellectual development of Western Europe from the Middle Ages through the French Revolution. (c) A general survey of the political, economic, social, and intellectual development of Western Europe since the French Revolution. Must be taken in a,b,c sequence (E) or b,c,a sequence (C).
- 201-9 (3,3,3) Culture, Society, and Behavior.** An examination of the anthropological, sociological, and psychological contributions to the understanding of human behavior. Must be taken in a,b,c sequence at Edwardsville or a,b,c sequence at Carbondale.
- 211-9 (3,3,3) Political Economy.** The functioning of the economy, the theory, organization, and operation of government, and the making of public policy in the economic sphere. Must be taken in a,b,c sequence.
- 300-9 (3,3,3) History of the United States.** A general survey of the political, social, and economic development of the United States. (a) 1492 to 1815, (b) 1815 to 1900, (c) 1900 to the present.
- 301-3 Law: Comparative Legal Systems.** A comparison of the legal institutions and laws in the United States, Western Europe, South America, and Eastern nations. C
- 302-3 Law: Civil Rights.** The law protecting the civil liberties and rights of people. C
- 303-3 International Relations.** A study of world politics. The causes of international conflict and the conditions of peace. C
- 304-3 Law: History and Philosophy.** A study of the evolution and development of law beginning with the ancient and archaic periods. Greek law, Roman law, and English and American law. In addition, the historical development of legal philosophy is reviewed. C
- 311-3 Economic Development of the United States.** Emphasizes the underlying trends

and forces of change that have led to our present economic structure, level of performance, and world position. Prerequisite: 211-9 (C), 101c or 211c (E).

312-3 Comparative Economic Systems. A comparative study of the goals, structure, and operation of the major economic systems, such as capitalism, socialism, communism, and fascism. Emphasis upon basic systems of organization and control, and upon mixed economies, rather than upon the traditional compartments within which economic systems are sometimes put. Prerequisite: 211c (E).

313-3 Economics of War and Peace. A study of relations between wartime and peacetime economies with specific reference to government controls, impact of military expenditures in "hot" and "cold" wars, and the reallocation of resources. C

314-3 Economic Analysis of the Agricultural Policies of the United States. Emphasis on the underlying economic bases of agricultural policies and the effects of such policies on farmers, middlemen, and consumers. C

320-6 Modern Britain. History, economics, government, and sociology of contemporary Britain (summer only, abroad). C

321-3 Socialization of the Individual. A study of the emergent social process in which the native capacities of the infant are shaped and developed through interaction with significant others during infancy and childhood. C

323-3 East and West in the 20th Century—Origins and Prospects. Study of the development since the late 19th century of basic internal forces such as industrialization, nationalism, socialism, and fascism in the U.S., Europe, and Asia, and the manner in which these forces have led to both conflict and co-operation between these geographical areas. C

325-3 Race and Minority Relations. An analytical study of the status of racial, ethnic, and religious minorities in the United States. C

331-3 The American Educational Systems. A comprehensive study of the nature and purpose of education in the United States and of how our schools are organized, financed, and conducted.

*** 333-3 Seminar in Problems of War and Peace.** Interdisciplinary topics in the general area of war and peace. C

341-3 Marriage. An examination of marriage in various societies with an emphasis on the origins, changes, and present status of dating, courtship and marriage in the United States.

343-3 Geographical Basis of International Conflicts. Examination of geographical factors of world political relations and conflicts during the inter-war and post-war periods. C

345-3 Introduction to American Foreign Policy. An investigation of the means by which American foreign policy is formulated and executed and an analysis of the most significant challenges confronting America abroad.

351-6 (3,3) Geographic and Cultural Background of Developing Africa. (a) The relation of geography to the culture of Africa, with emphasis on the place cultural and geographic factors have in the developing nations of Africa, (b) An introduction to the many diverse cultures of Africa from the Egyptian civilization to the Bushman hunters. Either part may be taken separately. E

354-3 Industrial Economic Geography. Geographic resource relationship to the economic life of our nation, distribution of resources, industrial production, and the transportation of industrial products. E

356-3 The Consumer and the Economy. A study of consumer motivations; institutional arrangements conditioning and affected by consumer economic behavior; and public policies and issues relevant to consumers. Prerequisite: 211a or consent of instructor. E

359-6 (3,3) Society and State: Social and Political Theories. Historical survey of political and social theories from ancient times to the 20th century. The formation of concepts are traced from their origins in the early civilizations to their development in Western thought. Critical analyses of representative thinkers. Either part may be taken separately. E

369-3 The Contemporary Far East. A study of relations between wartime and peacetime economies with specific references to government controls, impact of military expenditures in "hot" and "cold" wars, and the re-allocation of resources.

- 375-3 Alienation and Mass Society.** C
- 380-6 (3,3) East Europe: Cultural Heritage and Present Institutions.** (a) Cultural Heritage, (b) Present Institutions. An introduction to the European area east of the iron curtain with attention evenly divided among Russia, the Balkans, and Northern East Europe.
- 382-6 (3,3) History of Great Britain Since 1782.** The evolution of industrial democracy in Great Britain from the beginning of the Industrial Revolution to the present day. E
- 385-3 Contemporary Political Isms.** An advanced survey of recent political systems: Nationalism, Socialism, Communism, Liberal Democracy, Christian Socialism, Corporatism, Fascism.
- 390-3 Introduction to Comparative Government.** A comparative survey of the organization and operation of politics in modern states. C
- 392-3 Introduction to Latin American Government and Politics.** A general introduction to Latin American government on the institutionalized political expression of Latin American civilization and culture. Does not require a reading knowledge of Spanish or Portuguese. C
- * Problems of Peace and War is a sequence of three separate courses, (303, 313, 343) any one of which leads to an integrated seminar (333).

MAN'S INSIGHTS AND APPRECIATIONS (GSC)

- 100-3 Music Understanding.** Criteria for discriminative music listening as an asset to general culture. An examination of basic materials, techniques, and forms.
- 101-3 Art Appreciation.** Study of significant achievements in art related to Western culture and contemporary life.
- 102-3 Problems of Moral Decision.** An introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers of past and present. C
- 103-3 Masterpieces of Literature.** Reading in English, literary masterpieces of the Western world, to increase the student's competence in reading imaginative literature, to acquaint him with the great ideas and values of the best literature, and to train him to deal with literary materials in his writing. C
- 110-9 (3,3,3) An Introduction to Western Humanities.** A selection of great works expressing the aesthetic, moral, and religious values of Western man. Sets forth the critical vocabulary of six humanistic disciplines: art, music, philosophy, design, literature, and theater; provides some direct experience of each one; and calls attention to interrelations among the disciplines and between the humanities and other aspects of Western culture. Must be taken in a,b,c sequence. C
- 151-3 Introduction to Poetry.** Introduction to the enjoyment of poetry. Practice in techniques of critical reading and writing. E
- 152-3 Logic.** Study and practice in the analysis of verbal traps, relations between statements, deductive arguments, and inductive inferences. E
- 200-3 The Oral Interpretation of Literature.** Students participate in a dynamic analysis of literature stressing the creative role of the oral interpreter. Emphasis is on individual problems in understanding and communicating significant literary works.
- 201-3 Introduction to Drama.** Not a history of the drama. The class will read about a dozen plays, modern and ancient, and consider how various dramatic conventions and devices are used to give form and meaning to human experience. C
- 202-3 Introduction to Poetry.** A variety of poems, from the simpler to the more complex, are read and discussed. Emphasis is upon enjoyment and upon heightened insight into human experience. Devices of artistic form, such as imagery and meter, are discussed as they are involved with the substance they express, human actions, feelings, and attitudes, including the poet's satisfaction in giving artistic form to his material. C
- 203-3 Drama and the Arts of the Theater.** The study of drama as a literary type; the relationship with the theater audience, the role of the theater in Western culture and its relation to other creative arts.

204-3 Meaning in the Visual Arts. A historically-oriented conception of the relationship between art and civilization which seeps through the examination of relevant examples of the visual arts to develop awareness of the great complexities of artistic motivation, the development of art styles, and the interaction between the artist and society. C

205-3 The Contemporary Environment. A lecture-laboratory course designed to create a picture plane whereon a student may see some principles underlying architecture, visual communication, and other products of his physical and cultural environment. C

206-3 Foundation of Music. Emphasis on the historical sequence of musical development from primitive ages through the contemporary scene. An introduction to the materials of music, including application of basic skills to keyboard performance, is provided in studio sections. Two hours of lecture, one hour of studio each week. C

207-3 Philosophy of the Beautiful. A study of the structure and importance of the beautiful in nature, society, personality, and the arts. C

208-3 Logic and Meaning. A critical study of expressive, informative, and other modes of discourse, with emphasis on their roles in rational process. C

209-3 Modern Literature: Form and Idea. Designed to give the student an interest in and an understanding of the forms, themes, and values of modern American, British, and Continental literature. C

210-3 Introduction to Fiction. A study of the chief techniques of fiction and of some of the acceptable criteria for judging fiction. Readings in some of the masterpieces among American and European short story and novel writers. C

211-9 (3,3,3) An Introduction to Oriental Humanities. The literature, music, drama, visual art, and definitive cultural motifs of three great Asian traditions. (a) focuses on India, (b) on China, and (c) on Japan. May be taken in any sequence. C

251-9 (3,3,3) Literary and Philosophical Masterpieces. An introduction to great works of the Western heritage. (a) Introduction to the Hebraic, Greek, and Latin traditions; beginning with Genesis and concluding with Augustine. (b) The heroic and courtly traditions; the new learning of the Renaissance in Europe; beginning with Beowulf and concluding with Milton. (c) An introduction to literary and philosophical rationalism, romanticism, realism, and naturalism; beginning with Moliere and concluding with Nietzsche. May be taken in a,b,c sequence or by combining a,b or a,c with GSC 203 or 255. E

255-3 Music in History. An introduction to music history within history in general. E

301-3 Introduction to Semantics. The nature of language, the emotional and intellectual content; breaking down linguistic naivete and developing a consciousness of the motives in the rise of language. C

305-3 Contemporary French Drama. Study of French contemporary drama since 1930, to be read in translation, with emphasis on the piece a these, the Theatre libre, symbolist drama, and the drama of modern social problems. C

310-3 Religious Foundations of Western Civilization. Examination of the historical backgrounds and contemporary expressions of Jewish, Catholic, and Protestant thought. C

311-3 Philosophies and Religions of India. Historical and comparative study of Hindu, Jain, and early Buddhist thought and practice. C

312-3 Philosophies and Religions of the Far East. Historical study of the religious and secular thought of China and Japan; Confucianism, Taoism, and the varieties of Mahayana Buddhism. C

313-3 Folklore. The types of folklore, with extensive reading in American and European folklore: practice in collecting and classifying, and in the use of Thompson's index, etc. C

317-3 Recent American Literature. C

318-3 Modern British Literature. Contemporary British Fiction and Drama (Summer only—Oxford program). C

320-3 Greek Literature in Translation. A study of the masterpieces of Greek literature in translation. C

- 321-3 Revolution and Romanticism.** English literature of the late 18th and early 19th century in relation to the social and philosophical crises of times with animadversions on the relevance to our own times. C
- 330-3 Classical Mythology.** Study of the classical myths and their literary value. C
- 331-3 Latin Literature in Translation.** Discussion of Latin literary works and their influence on later literature. C
- 335-3 Studies in Short Fiction.** The development of the short story as an artistic expression, its techniques, and its versatility, from the early 19th century to the present time.
- 340-3 Modern Art A: The Art of the 19th Century.** The principal movements of the 19th century: neo-classicism, romanticism, realism, impressionism, and post-impressionism. The styles of David, Ingres, Delacroix, Corot, Courbet, Manet, Degas, Monet, Renoir, Seurat, Van Gogh, and Gauguin receive emphasis. C
- 341-3 Modern Art B: Art of the Early 20th Century.** A study of modern art as manifest in Fauvism, cubism, and expressionism. Emphasis on the artistic development of Cezanne, Matisse, Rouault, Picasso, Braque, Gris, Leger, Kirchner, and Kandinsky. C
- 342-3 Modern Art C. Art of the Mid 20th Century.** Abstraction, later German expressionism, the school of Paris, and surrealism. Special attention to the work of de Chirico, Klee, Miro, Beckman, Chagall, Kokoshka, Soutine, and late Matisse, Picasso, Braque, and Leger. C
- 345-3 World Literature.** A study of the outstanding works representative of various types and of varying cultures and eras, showing the fundamentally unchanging nature and spirit of man. C
- 348-3 Photography and Cinema.** The basic technology of photography and cinema. The development of photography and cinema as art forms and their uses in education and mass communications. Criteria for the evaluation and appreciation of photography and cinema. C
- 351-12 (4,4,4) History of World Art.** A study of painting, sculpture, and architecture from early to modern times, emphasizing the social and intellectual content of the major periods and significant styles. Prerequisite: 9 hours in GSC-2. E
- 354-6 (3,3) History of the Theater.** A study of (a) primitive, Greek, medieval, and Italian Renaissance theater, (b) the theater since the Italian Renaissance.
- 357-9 (3,3,3) Music History and Literature.** Integrates the development of musical thought and literature from Greek and Roman periods through the Renaissance and continuing through the twentieth century. Prerequisite: 255 or consent of instructor (E).
- 360-6 (3,3) Arts and Ideals in Famous Cities.** A presentation of the chief art styles and aesthetic ideals of Western culture as they flowered in seven famous cities. A close study of selected masterworks of architecture, fine art, music, literature, and philosophy of art as expressions of men who shaped the physical faces and cultural lives of their cities. (a) 5th-century B.C. Athens, 13th-century Chartres, late 15th-century Florence, and early 16th-century Rome. (b) 18th-century London, 19th-century Paris, 20th-century New York. E
- 363-6 (3,3) Philosophy of Science.** (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. May be taken in either a,b or b,a sequence, but a,b is preferable.
- 365-3 Shakespeare.** The major works of William Shakespeare. C
- 381-3 Greek Philosophy.** The thought of the pre-Socratics, Plato, and Aristotle. C
- 382-3 Graeco-Roman & Medieval Philosophies.** Epicureanism, Stoicism, and medieval Christian thought. C
- 383-3 Early Modern Philosophy.** Bacon, Hobbes, Descartes, Leibniz, Spinoza, and the British empiricists in the context of the scientific and general social outlook of the period. C
- 386-3 Early American Philosophy.** From the colonial period to the Civil War. C
- 387-3 Recent American Philosophy.** Thought of Howison, Royce, Peirce, James, Dewey, and others. C

ORGANIZATION AND COMMUNICATION OF IDEAS (GSD)

- 100-0 English Composition—Grammar and Usage. C
- 101-6 (3,3) English Composition. Basic rhetorical principles in expository writing. Must be taken in a,b sequence. Prerequisite: GSD 100 or satisfactory score on placement test.
- 103-3 Oral Communication of Ideas. The basic principles and techniques of oral communication as applied to everyday speech activities.
- 106-0 Intermediate Algebra. C
- 108-9 (3,3,3) Fundamentals of Mathematics. An introduction to mathematical concepts and reasoning presented at a level appropriate for university students who have had high school courses in intermediate algebra and plane geometry. Topics include the number system, college algebra, analytic geometry, probability and statistics. Must be taken in a,b,c sequence. C
- 110-3 Economic and Business Statistics. Elementary statistical concepts, including the nature of statistical methods, sampling, probability, frequency distributions, estimations, and hypothesis. May be taken as part c of the 108 sequence by economics and business students. C
- 112-9 (3,3,3) Introduction to Mathematics. Logical rules of deduction, the real number system, mathematical structures. Must be taken in a,b,c sequence. Prerequisite: Mathematics 100 or satisfactory score on placement test. E
- 114-9 (3,3,3) College Algebra and Trigonometry. For students who have had intermediate algebra and plane geometry in high school. Must be taken in a,b,c sequence, or b,c may be taken concurrently.
- 114d-3 Statistics. Descriptive statistics, probability distributions, sampling, problems of statistical inference, regression and correlation. Prerequisite: 114b. May be taken in lieu of 114c. E
- 120-9 (3,3,3) Elementary Chinese. Emphasis on development of reading skills. Must be taken in a,b,c sequence. C
- 123-9 (3,3,3) Elementary French. Open to students who have had no previous work in French. Must be taken in a,b,c sequence.
- 126-9 (3,3,3) Elementary German. Open to students who have had no previous work in German. Must be taken in a,b,c sequence.
- 130-9 (3,3,3) Elementary Greek. (a) Grammar is emphasized, (b,c) reading of a text, usually the New Testament. Must be taken in a,b,c sequence. C
- 133-9 (3,3,3) Elementary Latin. Open to students who have had no previous work in Latin. Must be taken in a,b,c sequence. C
- 135-9 (3,3,3) Elementary Portuguese. C
- 136-9 (3,3,3) Elementary Russian. No previous knowledge of Russian required. Must be taken in a,b,c sequence.
- 140-9 (3,3,3) Elementary Spanish. Open to students who have had no previous work in Spanish. Must be taken in a,b,c sequence.
- 144-9 (3,3,3) Elementary Italian. Open to students who have had no previous work in Italian. Must be taken in a,b,c sequence. E

HEALTH AND PHYSICAL DEVELOPMENT (GSE)

Courses numbered 100-104 are for men; 110-114 are for women.

100-3 (1,1,1) Restricted Physical Education (Men).

Notes pertaining to GSD 120 through 144:

1. Sections of conversation for 1 hour of credit are available with each of these languages, but on an elective basis.
2. Students having had high school language training should see the Department of Foreign Languages for placement.

101-3 (1,1,1) Swimming (Men). (a) Beginning swimming, (b) Intermediate swimming, (c) Diving.

101d-1 Life Saving (Men).

E

102-1 Physical Fitness (Men).

103-3 (1,1,1) Dance (Men). (a) Square, (b) Folk, (c) Social.

104-(1 per activity) Individual and Team Activity (Men). (a) Archery, (b) Badminton, (c) Basketball, (d) Bowling, (e) Golf, (f) Soccer, (g) Speedball, (h) Tennis, (i) Volleyball, (j) Softball, (k) Horseback riding, (m) Fencing, (n) Cross country, (p) Ice Skating, (q) Fly and bait casting, (r) Stunts and tumbling, (s) Gymnastics, (t) Touch football, (u) Wrestling, (v) Personal defense, (w) Judo (C).

110-3 (1,1,1) Restricted Physical Education (Women).

111-3 (1,1,1) Swimming (Women). (a) Beginning Swimming, (b) Intermediate Swimming, (c) Diving.

111d-1 Life Saving (Women).

E

112-1 Basic Body Movement (Women).

113-5 (1,1,1,1,1) Dance (Women). (a) Square, (b) Folk, (c) Social, (d) Beginning Contemporary, (e) Intermediate Contemporary.

114-(1 per activity) Individual and Team Activity (Women). (a) Archery, (b) Badminton, (c) Basketball, (d) Bowling, (e) Golf, (f) Soccer, (g) Speedball, (h) Tennis, (i) Volley Ball, (j) Softball, (k) Horseback riding, (m) Fencing, (n) Hockey, (p) Gymnastics and tumbling.

201-3 Healthful Living. Personal and community health. Presents scientific health information as a basis for helping the student develop wholesome health attitudes and practices.

ACCOUNTING

250-4 Accounting Fundamentals. A study of accounting principles covering the more prevalent types of business organizations. Usefulness of accounting reports and data rather than technical practice is stressed. Not open to students with a concentration in the School of Business or the Business Division.

251-12 (4,4,4) Accounting. Principles and practices in handling transactions in original recordings and books of account: trial balances, adjustments, and construction and presentation of financial statements for proprietorships, partnerships, and corporations. Third course in this sequence emphasizes management's uses of the product of the accounting function, through budgeting procedures, cost accounting, and other criteria for sound decision-making. Must be taken in a,b,c sequence. Prerequisite: sophomore standing.

301-1 to 6 Accounting Readings. Directed readings in books and periodicals in a defined field, under supervision of one or more staff members. Periodic written and oral reports are required. Prerequisite: junior standing and consent of division head.

E

309-2 Individual Income Tax. Preparation of income tax returns. Federal income tax law as applied to individuals. Not open to those with a concentration in accounting.

C

331-4 Tax Accounting. Study of accounting principles and procedures for meeting requirements of current laws and regulations which relate to federal income tax. Laboratory problems and preparation of tax returns with special emphasis on the individual taxpayer. Prerequisite: 251-12.

341-4 Cost Accounting. Cost determination and control of manufacturing activities. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard types of cost systems. Cost reports to executives. Prerequisite: 251-12.

351-8 (4,4) Intermediate Accounting. Further study of current accounting principles and procedures relating to various elements of financial reporting. Special emphasis on asset valuation, income determination, and alternative statement construction. Also, analysis and interpretation of statements; preparation and use of special statements. Must be taken in a,b sequence. Prerequisite: 251-12.

355-3 (C), 355-4 (E) **Governmental Accounting.** Study of the unique characteristics of fund accounting used in governmental units and subdivisions, and in certain private institutions. Emphasis upon budgeting and accounting control as a means of furthering sound financial administration of these organizations. Prerequisite: 251-12.

410-4 **Survey of Accounting.** Purpose is to permit students not concentrating in accounting and teachers to study advanced accounting from the standpoint of its usefulness in controlling and administering an enterprise. Critical analysis of reports, statements, and other accounting data but with little attention given to accounting techniques used in collecting and reporting such information. Prerequisite: 250 or 251-12 or equivalent. Not open to students with concentration in accounting.

415-4 **Electronic Data Processing in Business.** A study of the uses of electronic computers in business data processing. Includes an introduction to linear programming as it assists management in decision making. The student will prepare some programs in compiler language. There will be a limited amount of instruction in the operation of computer equipment. Prerequisite: 251-12 and consent of instructor. C

432-4 **Problems in Federal Taxation.** Study of income tax problems which arise from partnership, corporation, estate, and trust types of organization. Brief study of social security, federal estate, and gift taxes. Student does research in source materials in arriving at solutions of complicated tax problems. Prerequisite: 331.

442-4 **Advanced Cost Accounting.** Cost accounting for complex process production flows, joint products and by-products, spoilage, defective units and scrap. Managerial control and profit planning through capital budgeting, inventory planning, subjective probabilities, statistical methods, and operations research. Non-manufacturing costs, differential and comparative cost analysis. Prerequisite: 341.

453-4 (C) 453-8(4,4) (E). **Advanced Accounting.** Advanced study of accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, insurance, branch accounts, compound interest in relation to accounting practice, and preparation and use of consolidated statements. Prerequisite: 351-8.

456-4 **Auditing.** Objectives, standards, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisites: 331, 341, 351-8.

458-4 **Accounting Systems.** Problems in accounting systems design and installation. Examination of existing systems and practice in system design and reports. Prerequisites: 341, 351-8.

459-4 **Internship in Accounting.** Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the committee on internship. C

461-4 **C.P.A. and Advanced Accounting Problems.** A problems course, using problems from the examination sponsored by the American Institute of Certified Public Accountants and given in the last few years. Some problems also drawn from other sources. Prerequisites: 341, 351-8. C

461-4 **Advanced C.P.A. Problems (E).**

500-1 to 5 **Readings in Accounting.**

501-1 to 5 **Individual Research in Accounting.** C

550-4 **Accounting Theory.**

557-4 **Advanced Auditing.** C

562-4 **C.P.A. and Advanced Accounting Problems.** C

565-4 **Controllorship.** C

599-1 to 9 **Thesis.** C

AEROSPACE STUDIES

100a-0 **Leadership Laboratory.**

101-2 **Aerospace Studies 1, General Military Course.** An introductory course exploring the ideological causes of present world conflict and how nations develop and pursue their objectives. This is followed by discussions on the United States organi-

zation for national security, oriented primarily to aerospace power and a study of the Air Force as a profession. 2 hours lecture-discussion; 1 hour leadership laboratory. C

200a-0 Leadership Laboratory.

201-2, 202-2 Aerospace Studies 2, General Military Course. A study of the political-military issues surrounding the existence of world military forces. Included are a study of the U.S. Army and U.S. Navy including their missions and employment concepts; a study of the military forces of NATO, CENTO, and SEATO and their role in free world security. A study of the military forces of the USSR, Soviet satellites, and Communist China; a look at the trends and implications of world military power. 2 hours lecture-discussion; 1 hour leadership laboratory. C

301-3, 302-3, 303-3 Aerospace Studies 3 (C); Growth and Development of Aerospace Power (E). Professional Officer Course. A study of the nature of war, the growth and development of aerospace power, the United States Air Force, astronautics and space operations, and the future development of aerospace power. Involves specific exercise of written and spoken communication skills. Requires 3 hours lecture-seminar; in some cases a 1 hour leadership laboratory is also required. Prerequisites: satisfactory completion of the GMC or six week field training course.

350-4 Aerospace Studies 4. A study of flight regulations, weather, and navigation. 4 hours lecture, demonstration-performance. Prerequisite: Enrollment in AF ROTC Flight Instruction Program or with consent of the PAS. C

351-3, 352-3, 353-3 Aerospace Studies 4. Professional Officer Course. A study of professionalism, leadership, and management. Includes professional responsibilities, the military justice system, leadership theory, functions and practices, management principles and functions, problem solving, and management tools, practices, and controls. 3 hours lecture-seminar; in some cases 1 hour leadership laboratory. Prerequisite: A.S. 301, 302, and 303, or with consent of the PAS. C

AGRICULTURAL INDUSTRIES

114-4 Introduction to Agricultural Economics. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture. C

210-2 Introduction to Agricultural Education. An introduction to the history and philosophy of high school vocational agricultural programs. C

214-2 Agricultural Drawing. The fundamentals of lettering; use of instruments, orthographic and isometric projections, topographic drawing, and graphic depiction of statistical information. C

215-4 Introduction to Farm Structures and Electrification. An introduction to the basic concepts of structures and electricity as they apply to agriculture. Includes farm structures, soil and water structures, and farm electrification. C

303-4 Surveying. Elementary surveying; use of tape, compass, level, and transit, with practice in making simple maps. Prerequisite: 214, and Mathematics 114c. C

306-5 (3,2) Soil and Water Conservation. (Same as Plant Industries 306.) (a) The study of the theoretical factors affecting soil erosion and excessive water run-off, including practices of water management and soil conservation. Prerequisite: one course in soils. (b) Laboratory. Practical structural methods of controlling water run-off and soil erosion. Prerequisite: 306a or concurrent enrollment. C

309-5 Agricultural Education. Methods of teaching agriculture in secondary schools. Taken concurrently with 312 in a professional quarter. Field prerequisites: GSB 201b, Guidance 305, Secondary Education 310, 48 hours in agriculture. C

310-4 General Agriculture. A survey of the agricultural field as it relates to the art and science of food and fiber production; problems in livestock and poultry production; soil and water management; and field crops, fruit, and vegetable production. Can be used for natural science credit in elementary education. C

311-3 Adult Education in Agriculture. Nature and scope of adult education in agriculture; methods of effectively working with adult and young farmer groups. Prerequisite: Guidance 305. C

312-12 (2,10) Student Teaching in Vocational Agriculture. (a) Summer Practice. An internship with the vocational agriculture teacher in an approved center for practice in summer activities. (b) Student teaching. Experience in conducting a complete program in vocational agriculture in an approved center. Taken concurrently with 309. C

350-5 Farm Management. Measuring profits, principles, and practice in organizing and operating the business. Field trips. Prerequisites: GSB 211a, junior standing. C

351-4 Farm Financial Management. Farm records and accounts as aids in solving financial problems; obtaining and using credit and insurance, budgeting. Prerequisite: 350 or consent of instructor. C

352-3 Agricultural Prices. Fluctuations in the general price level, causes and stabilization policies as they affect agriculture. Price determination including the measurement of supply and demand, elasticity, their application to price stabilization. Prerequisites: 354, GSB 211a. C

354-3 Agricultural Marketing. Marketing outlets for farm products, price determinants, agricultural market efficiency, margins, and costs. Prerequisite: GSB 211a. C

373-5 Farm Power and Machinery. A basic course to acquaint the student with the principles, operating adjustments, maintenance, and economical use of common farm power units and field machines. Prerequisite: GSD 108b or equivalent. C

374-4 Farm Electrification. A study of the more common electrical fundamentals and their application to farmstead needs; factors to consider in the selection and use of specialized electrical equipment and motors. Prerequisite: GSD 108b. C

375-3 Farm Shop. Set-up of the farm workshop; selection, care, and use of tools and machinery for farm repair work; equipment construction. Prerequisite: GSD 108b or equivalent. C

376-4 Tractor Maintenance. A study of daily and periodical service needs of tractors and on-farm servicing of functional parts. Prerequisite: 373. C

377-4 Farm Structures. Basic requirements of farm buildings; materials used; elementary principles of design; practical application of these principles. Prerequisite: GSD 108b or equivalent. C

381-1 to 2 Agricultural Seminar. (Same as Animal Industries 381, Forestry 381, and Plant Industries 381.) Discussions of problems in agriculture. Limited to senior students. C

390-1 to 6 Special Studies in Agricultural Industries. Assignments involving research and individual problems. C

410-2 to 4 Problems in Agricultural Services. Discussion, assignments, and special workshops on problems related to in-service training programs in the agriculturally related fields. Development of more effective programs in working with farm people. Prerequisite: graduate student in agricultural services or consent of instructor. C

411-3 Agricultural Extension. A study of the history, organization, objectives, programs, and methods of agricultural extension work. Prerequisite: Journalism 393 and a course in psychology or sociology or consent of instructor. C

413-3 Agricultural Education Practices. A discussion of problems and practices in teaching agriculture in high school. Prerequisite: 312b. C

417-4 Agricultural Development in Emerging Countries. Principles and practices in improving agriculture in areas with limited capital and low levels of technology. Special emphasis on developments in Asia, Africa, and South America. Prerequisite: GSB 211a and consent of chairman. C

450-4 Advanced Farm Management. Methods of analyzing farm enterprises, comparing farm businesses, allocating farm resources, combinations of enterprises, and production factors. Field trips. Prerequisite: 350. C

456-11 (3,2,2,2,2) Agricultural Marketing Problems and Practices. (a) Cooperatives. Development of the agricultural cooperative movement, agricultural cooperative organization, legal requirements, principles and practices of agricultural cooperative associations. (b) Livestock. Problems and their solutions in marketing livestock. (c) Field Crops. Problems and their solutions in marketing field crops. (d) Dairy and Poultry. Problems and their solutions in marketing dairy and poultry products. (e) Horticultural crops. Problems and their solutions in marketing horticultural crops. Field trips cost \$5. Prerequisites: 354, GSB 211a, or consent of instructor. C

- 471-4 Land Resource Planning.** (Same as Forestry 471 and Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; elementary land resources planning techniques. Field trips. Prerequisite: 350 or Forestry 470. C
- 478-4 Advanced Farm Machinery.** Materials on construction; basic mechanics involved in tillage machinery; rotary powered transmission; product cleaning, drying, and sorting; costs of operation; materials handling. Prerequisites: 350, 373, 374, or consent of instructor. C
- 505-3 Agricultural Economics Research Methods.** C
- 520-1 to 6 Readings.** C
- 520b-1 to 6 Readings in Resource Economics.** C
- 550-4 Production Management.** C
- 552-2 Advanced Agricultural Prices.** C
- 554-4 Advanced Agricultural Marketing.** C
- 575-1 to 6 Research.** C
- 581-1 to 6 Seminar.** C
- 582-1 to 3 Seminar on Foreign Agricultural Problems.** C
- 599-2 to 9 Thesis.** C

AMERICAN STUDIES

- 398-4 Seminar in American Studies.** Helps the student to integrate his knowledge of American culture and to undertake scholarship that crosses the boundaries of traditional disciplines. Prerequisite: senior standing. E

ANIMAL INDUSTRIES

- 105-4 Animal Husbandry.** Survey of beef cattle, sheep, and hog industries; laboratory work in judging. Field trip. C
- 125-4 Elementary Poultry Production.** Brooding and rearing of chicks; housing, feeding, disease control, flock selection, management, and marketing of poultry. C
- 231-4 Dairy Husbandry.** Introductory work, including selection, herd improvement, milk secretion, manufacturing of dairy products. C
- 311-6 (3,1,2) Livestock Judging.** (a) Comparative judging of breeding and feeder livestock. (b) Grading and selection of breeding, feeder and market livestock. (c) Grading of live market meat animals. Field trip. Must be taken in a,b,c sequence. Prerequisite: 105 and consent of instructor. C
- 312-3 (2,1) Dairy Cattle Judging.** (a) Comparative judging of dairy cattle, (b) Comparative selection and evaluation of dairy cattle. Field trip. Must be taken in a,b sequence. Prerequisite: 231. C
- 313-4 (2,1,1) Poultry Judging.** Selection of poultry for egg production and breeding; grading of poultry and eggs. Field trips. May be taken in b,c,a sequence, but a,b,c is preferable. Prerequisite: 125. C
- 315-4 Feeds and Feeding.** Principles of domestic animal nutrition and feeding. Balancing rations. Prerequisite: 105, 125, or 231. C
- 316-4 Insect Pests and Their Control.** (See Zoology 316.) C
- 319-3 Horses.** Types, breeds, selection, use, care, and management of saddle and draft animals. Field trip. Prerequisite: 315 or consent of instructor. C
- 321-4 Processing and Grading of Poultry Products.** Skills required in price determination, processing, grading, storage, merchandising, and distribution of poultry products. Prerequisite: 125. C
- 327-4 Hatchery and Breeding Farm Management.** Flock selection, testing, sexing, trade rules and regulations, trap-nesting, wing-banding, incubation, disease control, hatchery-producer agreements, records. Prerequisite: 125. C
- 332-4 Animal Breeding and Genetics.** The application of the basic principles of genetics and breeding systems to the improvement of farm animals. Prerequisites: 105, 125, or 231; GSA 203 or equivalent. C
- 337-4 Animal Hygiene.** Contagious, infectious, and nutritional diseases and parasites of animals; their prevention and control. Field trip. Prerequisites: 105, 125 or 231. C

381-1 to 2 Agricultural Seminar. (Same as Agricultural Industries 381, Forestry 381, and Plant Industries 381.) Discussions of problems in agriculture. Limited to junior and senior students. C

390-1 to 6 Special Studies in Animal Industries. Assignments involving research and individual problems. Approval of department chairman required. Juniors and seniors only. C

415-8 (4,4) Animal Nutrition. (a) Physical and chemical properties of nutrients and their uses and principles involved in determination of nutrient requirements. (b) An integration of the basic facts concerning the nature of nutrients and their metabolism. Must be taken in a,b sequence. Prerequisite: 315 and GSA 101c or equivalent. C

420-4 Commercial Poultry Production. Broilers, layers, and turkeys as adapted to poultry specialty farms. Field trips. Prerequisite: 125. C

430-4 Dairy Production. Milk sanitation, feeding, breeding, calf raising, records, buildings and equipment, sanitation, and diseases. Field trip. Prerequisites: 231, 315. C

431-4 Reproduction and Artificial Insemination of Farm Animals. The anatomy and physiology of reproduction and the principles of artificial insemination in farm animals. Field trip. Prerequisites: 105 or 231; GSA 203 or equivalent. C

432-3 Quantitative Inheritance of Farm Animals. A review of the principles underlying the influence of mutation, selection, migration, and random drift in animal breeding populations; castination and interpretation of heritabilities and genetic correlations; effects of variances of quantitative traits of farm animals. Prerequisite: 332. C

433-3 Feeding Dairy Cattle. Nutrient requirement of dairy cattle. Feeding calves and heifers for commercial growth, and cows for economical milk production. Pasture, hay, and silage utilization in milk production. Field trip. Prerequisites: 231 and 315. C

456-4 (2,2) Agricultural Marketing Problems and Practices. (b) Livestock. Problems and their solutions in marketing livestock. (d) Dairy and poultry. Problems and their solutions in marketing dairy and poultry products. Prerequisites: GSB 211a, Agricultural Industries 354 or consent of instructor. (See also Agricultural Industries 456.) C

465-5 Swine Production. Breed selection, breeding, feeding, management, and marketing of swine. Field trip. Prerequisites: 105, 315. C

480-4 Sheep Production. Breeding, feeding, and management of sheep. Field trip. Prerequisites: 105, 315. C

485-4 Beef Production. Breeding, feeding, and management of beef and dual-purpose cattle. Field trip. Prerequisites: 105, 315. C

486-4 The Range Livestock Industry. Designed to acquaint advanced animal industries students with range livestock operation; consists of full-time classroom review of beef cattle and sheep production followed by a two-to-three-week field trip through the range area. Prerequisites: 480, 485. Summer only. C

487-4 Commercial Livestock Feeding. Consideration of principles and problems in fattening beef cattle and sheep for market. Field trip. Prerequisites: 105 and 315. C

505a-5 Research Methods in Agricultural Science. C

520-1 to 6 Readings in Animal Industries. C

525-4 Advanced Poultry Production. C

530-4 Advanced Dairy Production. C

565-4 Advanced Swine Production. C

575-1 to 6 Individual Research. C

581-1 to 6 Seminar. C

585-4 Advanced Beef Production. C

599-2 to 9 Thesis. C

ANTHROPOLOGY

300-3 Physical Anthropology. Man as a biological being, his relationships to other living things. Human origins and development. Concept of race and the races of mankind. Human genetics and normal human variation. C

- 300-4 Man's Place in Nature.** Man as a biological being, his relationships to other living things, human origins and development, the concept of race and races of mankind, human genetics, and normal human variation. E
- 303-3 Old World Prehistory.** A survey of man's earliest cultural beginnings. Paleolithic and Neolithic periods in Europe, Africa, the Near East, and Asia. C
- 304-3 The Origins of Civilization.** A study of the complex environmental and cultural factors that led to the rise and fall of early high-cultures in both the Old and New Worlds. C
- 304-4 The Origins of Civilization.** The conditions that produced the early high culture of both Old and New Worlds. A study of the complex environmental and cultural factors that led to the rise and fall of early civilizations. E
- 305-9 (3,3,3) Peoples and Cultures of the World I.** The biological and cultural history of man in (a) North America, (b) Asia, and (c) Oceania from early times to the present.
- 306-9 (3,3,3) Peoples and Cultures of the World II.** The biological and cultural history of man in (a) South America, (b) Europe, and (c) Africa from early times to the present. C
- 400-4 Man and Culture.** The nature of culture and cultural process. Relationships of culture and man as an individual and as a group. Emphasis on "the anthropological point of view."
- 401-4 Language in Culture.** Language as a part of culture. Linguistics and the study of culture. C
- 402-4 Human Biology: The Interaction of Biological and Cultural Behavior.** The viewing of man as to his zoological position, genetics, past and present; and the biological bases for his unique behavior in the animal world, i.e., cultural behavior. C
- 404-4 Primitive Art and Technology.** The development of man as a tool-using and art-loving being. Artistic and technological traditions of non-Western peoples, past and present. C
- 405-4 Social Anthropology.** A comparative approach to the organizational features of human groups. Functional aspects and distributions of kinship, political, religious, and economic systems.
- 408-8 (4,4) History of Anthropological Thought.** The growth of anthropology to about 1860, followed by a more intensive survey of the concepts and ideas of anthropology during the past hundred years.
- 409-4 Anthropology and Modern Life.** The applications of anthropological principles to the solution of problems of the modern world. Contributions of anthropology to the work of the educator, social worker, administrator, business man, government official, and other specialists dealing with man in Western and non-Western cultures.
- 413-4 Introduction to General Linguistics.** C
- 415-4 Culture Change.** Examination of long and short range culture change, acculturation process and innovation, theory and method in study of culture change. E
- 430-4 Archaeology of North America.** An introduction to the methods of archaeology and a survey of prehistoric Indian cultures north of Mexico, with particular emphasis upon the cultures of the Mississippi Valley. E
- 483-3 to 18 Individual Study in Anthropology.** Guided research upon anthropological problems. Students should consult the chairman before enrolling.
- 501-9 (3,3,3) Pro-seminar in Physical Anthropology.** C
- 503-9 (3,3,3) Pro-seminar in Archaeology.** C
- 505-9 (3,3,3) Pro-seminar in Linguistics.** C
- 507-9 (3,3,3) Pro-seminar in Social Anthropology.** C
- 509-9 (3,3,3) Pro-seminar in Ethnology.** C
- 510-3 to 27 Seminar in New World Archaeology.** C
- 511-3 to 27 Seminar in Mesoamerican Archaeology.** C
- 512-3 to 27 Seminar in Old World Archaeology.** C
- 520-3 to 27 Seminar in the Ethnology of the New World.** C
- 521-3 to 27 Seminar in the Ethnology of Mesoamerica.** C
- 522-3 to 27 Seminar in the Anthropology of Oceania.** C

523-3 to 27 Seminar in the Anthropology of Africa.	C
524-3 to 27 Seminar in the Anthropology of Europe.	C
535-3 to 27 Seminar in Physical Anthropology.	C
545-3 to 27 Seminar in Linguistics.	C
550-3 to 27 Seminar in the Cultures of Latin America.	C
560-3 to 27 Seminar in Comparative Social Organization.	C
562-3 to 27 Seminar in the Anthropology of Contemporary Peoples.	C
565-3 to 27 Seminar in Cultural Change and Development.	C
567-3 to 27 Seminar in Anthropological Theory and Method.	C
570-3 to 27 Seminar in Art and Technology.	C
575-3 to 27 Seminar in the Individual and Culture.	C
581-3 to 27 Seminar in Anthropology.	C
582-3 to 27 Problems in Archaeology.	C
584-3 to 27 Problems in Cultural Anthropology.	C
585-3 to 27 Readings in Anthropology.	C
597-3 to 27 Fieldwork in Anthropology.	C
599-1 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

APPLIED SCIENCE

- 101-9 (3,3,3) **Graphics.** (a) Basic principles of graphic communications. Pictorial projection, sections and conventions, dimensioning, auxiliary views, freehand lettering, and sketching. (b) Graphical solution of problems involving the understanding of the space relationships of points, lines, and planes; intersections and developments. (c) Auxiliary views, threads and fasteners, dimensioning. Laboratory. Must be taken in a,b,c sequence. No prerequisite. E
- 260-9 (3,3,3) **Analytical Mechanics.** (a) Resultants of force systems, algebraic and graphical conditions of equilibrium of force systems; analysis of forces acting on members of trusses, forces due to friction; centroids. (b) Displacement, velocity, and acceleration of a particle; translation, rotation; plane motion. (c) Solutions using the principles of force, mass and accelerations, work and energy, and impulse and momentum. Must be taken in a,b,c sequence. Prerequisite: Physics 211a, Mathematics 150b or concurrent enrollment. E
- 263-12 (4,4,4) **Surveying.** (a) The use and care of surveying instruments. Fundamental principles of surveying, computations, land surveying, topographic surveying data processing. (b) Field astronomy, route surveying, introduction to photogrammetry, hydrographic surveying, and subsurface surveys. (c) Precise surveying, geodesy, altimetry, analysis of errors and error propagation, measurements conditioned and adjusted by method of least squares and other methods. Laboratory. Must be taken in a,b,c sequence. Prerequisites: GSD 114c or Mathematics 111b. E
- 300-9 (3,3,3) **Thermodynamics.** (a) The study of fundamental energy concepts and the laws of thermodynamics, availability of energy, properties of gases, vapors and gas-vapor mixtures, flow and non-flow processes. (b) Engine cycles and applications to internal combustion engines, gas turbines, steam turbines, jet devices, air compressors, and air engines. Combustion refrigeration and air conditioning. Heat transfer principles. (c) Axiomatic thermodynamics, criteria for equilibrium; absolute temperature; Maxwell's relations; open systems; the phase rule; systems of one and two components; idealized systems; equations of state; systems involving chemical and electrochemical equilibrium. Must be taken in a,b,c sequence. Prerequisite: Mathematics 150b, Physics 211b. E
- 300-5 **University Physics IV.** (See Physics 300) C
- 307-5 **Analytical Problems in Technology.** Methods of formulation and solution of special problems encountered in industry and technology using advanced techniques. Prerequisites: Mathematics 114a,b,c. C
- 420-3 **Digital Computers in Research.** Basic foundations used in operations research. An intensive study in the use of digital computers as related to topics such as probability and statistics, matrices, game theory, Monte Carlo techniques, dis-

tribution and scheduling problems, and simulation. Prerequisite: Engineering 222. C
421-3 Programming Languages. A study of development and the use of automatic programming languages for stored program electronic computers. Included are symbolic languages, interpretive systems, algebraic-oriented and business-oriented data processing languages, macro assemblers, and list processors. (ALGOL, FORTRAN, COBOL, COMIT, IPL, etc.) A comparison of the languages will be made, and each student will prepare programs using the languages studied. Prerequisite: Engineering 222. C

422-3 Programming Systems. The use and methods of electronic data processing systems. Topics are searching, ordering, codifying, information retrieval, process control, executive routines, and heuristic programming. The student will apply system techniques for solution of problems using the computer equipment of Data Processing and Computing Center. Prerequisite: Engineering 222. C

431-9 (3,3,3) Nuclear Science. An introductory course to provide a background for further work in Nuclear Science. Lectures and problems in radioactivity and the uses of radioisotopes, nuclear engineering, introductory reactor theory, and use of an analog computer in solving problems of neutron transport and reactor kinetics. Prerequisite: Mathematics 252b and Applied Science 300. C

450-4 Elementary Statistical Mechanics. Elementary statistical mechanics, with applications to simple physical and chemical systems. C

470-5 Introduction to Quantum Theory. Study of the experimental foundations of quantum mechanics and the quantum theoretical interpretation of atomic phenomena. C

501-9 (3,3,3) Materials Science. C

502-6 (3,3) Materials Structure Analysis. C

503-6 (3,3) Physical Properties of Crystalline Materials. C

504-4 X-Ray Diffraction and Solid State Physics. C

521-6 (3,3) Design of Automatic Programming Language Processors. C

522-6 (3,3) Programming Systems Design. C

ART

Art Education Courses: 300, 306, 307, 308, 365, 408, 460, 466, 560, 566, 599.

Art History Courses: 225, 301, 309, 345, 346, 347, 348, 349, 350, 356, 369, 380, 445, 449, 471, 473, 475, 482, 483, 571, 573, 599.

Studio Courses: 100, 200, 201, 203, 302, 305, 310, 324, 325, 332, 341, 358, 385, 393, 400, 401, 404, 405, 406, 410, 416, 420, 426, 430, 436, 440, 441, 446, 493, 501, 502, 504, 506, 511, 516, 520, 526, 530, 540, 546, 599.

100-15 (5,5,5) Basic Studio. A studio course in visual fundamentals emphasizing the ways in which art may be structured. Studio experience in two- and three-dimensional materials. Must be taken in a,b,c sequence.

200-12 (4,4,4) Studio Disciplines. Disciplines in drawing, painting, and sculpture. C

201-8 (4,4) Drawing and Composition. An extension and intensification of Basic Studio experiences with emphasis on draughtmanship and composition. Must be taken in a,b sequence. Prerequisite: 100-15. E

203-8 (4,4) Beginning Ceramics. An exploration of the technical and aesthetic possibilities of the potter's craft. Must be taken in a,b sequence. Prerequisite: 100-15. E

225-9 (3,3,3) History of World Art. A study of painting, sculpture, and architecture from prehistoric to modern times. Emphasis is placed upon the major periods and great styles in relation to their geographical and social backgrounds. Open to all university students during the junior or senior year, with consent of the department. (a) The art and architecture of ancient and classical man. (b) Art of the medieval epoch. (c) From the Renaissance to the present. C

245-2 to 12 The Figure. C

300-12 (4,4,4) Art Education. Theory and practice of art activities in the elementary schools. Designed for elementary education students.

301-3 Mannerist, Baroque, and Rococo Art. A study of European art from the end

of the High Renaissance until the late eighteenth century. Emphasis is placed upon the works of such masters as Tintoretto, El Greco, Bernini, Poussin, Rubens, Rembrandt, Watteau, Chardin, Fragonard. C

302-2 to 12 Pottery. Similar to 203 with higher level of achievement expected. Advanced subject matter adjusted with reference to number of hours of credit in ceramics previously earned. C

305-12 (4,4,4) Advanced Ceramics. Intensive study of ceramics as an art form. Prerequisite: 203-8. E

306-3 Materials and Techniques in Art Education. Studio courses providing a broad experimental experience with materials and techniques adaptable to art classes in grade and high school. In addition to studio assignments, each student is required to complete a working file of published material and notes on materials and techniques in art. C

307-3 Theory and Philosophy of Art Education. Survey of art education theory providing the art education student with an introduction to theoretical studies in his field, and through scheduled observation visits to art classes at the University School, with the problems of relating theory to practice. C

308-3 Curriculum and Administration in Art Education. Provides experience in dealing with problems of planning, organizing, introducing, and administering art curricula in grade and high school. Includes comparative study of published material and preparation of a working file on the subject. C

309-3 Oriental Art. C

310-12 (4,4,4) Painting. Intensive study of painting as a medium of expression. Individual rather than group problems are engaged. Prerequisite: 201-8. E

323-4 The Figure Advanced. C

324-4 Watercolor. Intensive study of watercolor painting as a medium of expression. Transparent watercolor, gouache, casein, and tempera techniques may be explored. Prerequisite: 201-8. E

325-2 to 15 Studio (C); 325-12 (4,4,4) Studio (E). No more than 4 hours per quarter. Prerequisites: 8 hours in medium of choice (except where such courses do not exist) and consent of instructor.

332-2 to 12 Jewelry and Silversmithing. Basic processes in jewelry and metalwork. Emphasis upon design experience and high critical standard. C

341-2 to 12 Drawing. C

345-3 Art of the Nineteenth Century. The meaning and varieties of art from the time of the French Revolution until late Impressionist art of the nineteenth century. Relations to the social environment are interpreted. E

346-3 Medieval and Renaissance Art. A study of the development of art in Europe from the early Christian period through the Renaissance. Prerequisite: GSC 351-12. E

347-9 (3,3,3) Ancient Art. An interpretation of painting, sculpture, and architecture from prehistoric times through the ancient Egyptian, Mesopotamian, Greek, and Roman civilizations, presented with consideration of the general cultural settings of the peoples involved.

348-3 Medieval Art. The formation and development of religious art in Europe from the early Christian period through the Gothic. Relationships between Middle Ages society and art are studied. C

349-3 Renaissance Art. Lectures in European art and architecture from the late 14th century to the mid-18th century. C

350-9 (3,3,3) American Art. A survey of American painting, sculpture, and architecture from the early 18th century to the present.

356-3 Theory of Art. C

358-2 to 12 Prints. Introduction to printmaking as a medium. Studio projects in intaglio, relief, and planographic processes. Prerequisite at Edwardsville: 201-8.

365-4 Art Education in the Secondary Schools. For art education students preparing to teach on secondary level; includes studio projects designed to develop awareness of technical and aesthetic needs of high school students, reading and discussion of literature, planning of curriculum. Fall quarter only at Edwardsville.

- 369-3 **Primitive Art.** A study of the arts of "Primitive" peoples of Africa, the Pacific, and the Americas. Characteristic works are interpreted in context with the general conditions of primitive society. The significant influences of primitive art on modern painting and sculpture are considered. C
- 380-4 **Theory and Appreciation of Art.** C
- 385-2 to 12 **Weaving.** Development of understanding of two and four harness loom and essential processes in weaving simple and pattern textiles. C
- 393-4 to 12 **Sculpture.** Problems in modeling, carving, casting and construction. Prerequisite: 200-12 (C); 201-8 (E).
- 401-2 to 12 **Research in Painting.**
- 405-2 to 12 **Studio in Sculpture.**
- 406-2 to 12 **Studio in Painting.**
- 408-4 **Art Education for Elementary Teachers II.** C
- 410-2 to 12 **Research in Prints.**
- 416-2 to 12 **Studio in Prints.**
- 420-2 to 12 **Research in Pottery.**
- 426-2 to 12 **Studio in Pottery.**
- 430-2 to 12 **Research in Metal Construction.** C
- 436-2 to 12 **Studio in Metal Construction.** C
- 440-2 to 12 **Research in Weaving.** C
- 441-2 to 6 **Studio in Drawing.** C
- 445-9 (3,3,3) **Modern Art.** (a) 19th Century, (b) Early 20th Century, (c) Mid 20th Century. C
- 446-2 to 12 **Studio in Weaving.** C
- 449-3 **Renaissance Art.** 15th and 16th century European art with consideration of the significance of Renaissance art to the growth of Humanism. C
- 450-1 **The Visual Arts in Higher Education.** C
- 460-2 to 12 **Research in Art Education.**
- 466-2 to 12 **Studio in Art Education.** C
- 471-3 **Baroque Painting in Italy.** Major developments in style and expression in Italian painting from the late Mannerist period until the early 18th century. C
- 473-3 **Romantic Art of the 19th Century.** A study of the sources and characteristics of Romantic art, approached through the works of such masters as Gros, Delacroix, Blake, Friedrich, Goya, and certain Americans. C
- 475-3 **Impressionist and Post-Impressionist Painting.** The late 19th century in France: Impressionism, Neo-Impressionism, Pointillism, and early Expressionism. The styles of Manet, Monet, Degas, Renior, Seurat, Van Gogh, and Cezanne receive emphasis. C
- 482-3 **Art History Seminar.** Lectures, readings, and reports on artists, styles, subjects of special interest which will be announced periodically. C
- 483-3 to 12 **Research in Art History.** Individual research in the painting, sculpture, architecture, and related arts of the various periods.
- 493-2 to 12 **Advanced Sculpture.** C
- 501-2 to 12 **Seminar in Painting.**
- 502-2 to 12 **Seminar in Sculpture.**
- 504-2 to 12 **Research in Sculpture.** C
- 506-2 to 12 **Research in Painting.** C
- 511-2 to 12 **Seminar in Prints.**
- 516-2 to 12 **Research in Prints.** C
- 520-2 to 12 **Seminar in Pottery.**
- 526-2 to 12 **Research in Pottery.** C
- 530-2 to 12 **Seminar in Metal Construction.** C
- 536-2 to 12 **Research in Metal Construction.** C
- 540-2 to 12 **Seminar in Weaving.** C
- 546-2 to 12 **Research in Weaving.** C
- 560-2 to 12 **Seminar in Art Education.** C
- 566-2 to 12 **Research in Art Education.**
- 571-2 to 5 **Readings in Art History.**

573-3 to 12 Problems of Art History.
599-5 to 9 Thesis.

C
C

ASTRONOMY

201-4 **Introduction to Astronomy.** Uses of astronomy, reference systems, time, instruments, solar and galactic systems and satellites. Includes evening observations in addition to lecture-demonstrations.

202-4 **Introduction to Astronomy.**

C

GSA 356-3 **Astronomy.**

E

BOTANY

101-5 **General Botany.**

E

131-5 **Field Biology.** A course in methods of identification of various plants and animals and location of source material suitable for teaching nature study. Primarily for those planning to teach in primary and rural schools. Five Saturday field trips and laboratory studies. Approximate cost: \$5.

202-5 **General Botany.** A study of representative plants of the major plant groups; classification; evolution of the plant kingdom. Three lecture and four laboratory hours per week, and one all-day (required) field trip. Cost: about \$5.

E

203-5 **Taxonomy of Local Seed Plants.** A study of the principles of classification and the use of manuals, with reference to local ferns and flowering plants. Three lecture and four laboratory hours per week. Cost: about \$5. Prerequisite: GSA 201c.

E

225-5 **Cellular Physiology.** A discussion with laboratory illustration of basic physiological processes. Generally, plant materials will be used in the laboratory. Three lecture and four laboratory hours per week. Prerequisite: GSA 201c, organic chemistry.

E

300-3 **Morphology of Non-Vascular Plants.** Introduction to the structure, development, and relationships of the algae, fungi, and bryophytes. Prerequisite: GSA 201c.

C

301-3 **Morphology of Vascular Plants.** Introduction to the structure, development, and relationships of the fern-allies, ferns, gymnosperms, and angiosperms. Prerequisite: GSA 201c. Recommended: Botany 300.

C

308-5 **Taxonomy and Cultivated Plants.** A study of the classification of woody and herbaceous cultivated plants, both exotic and native. Prerequisites: GSA 101c, Botany 203.

C

310-5 **Plant Anatomy.** An introduction to cell division, development, and maturation of the structures of the vascular plants. Three lecture and four laboratory hours per week. Prerequisite: GSA 201c.

E

311-5 **General Bacteriology.** An advanced treatment of cytology, theories and techniques of staining, physiology, enrichment cultures, and classification of microorganisms and their agricultural, industrial, and medical relationships. 3 hours lecture, 4 hours laboratory. Prerequisite: one course in biological science and organic chemistry.

E

313-3 **Natural History of Local Plants.** Increases insight and appreciation of plants. Identification and natural history stressed. Lecture, laboratory. Field trip costs about \$5. Prerequisite: GSA 201c.

C

315-4 **Plant Genetics.** (Same as Plant Industries 315.) (C); 315-3 **Plant Genetics** (E). A general course involving principles of evolution and genetics of plants. Prerequisite: secondary concentration in agriculture, botany, or zoology. (C); GSA 201a or consent of instructor (E).

320-5 **Elements of Plant Physiology.** A study of the functions of plants and their relation to the various organs. Three lecture and four laboratory hours per week. Prerequisite: GSA 201c; chemistry 350 or a secondary concentration in chemistry. (C); GSA 201c (E).

321-3 to 5 **Elementary Botanical Microtechnique.** Methods of preservation and preparation of plant materials for examination by the light microscope. One lecture and

four laboratory hours per week. Prerequisite: GSA 201c. (C) consent of instructor. (E)

325-5 Metabolism. Intermediary metabolism of plants and animals with emphasis upon the newer knowledge. Laboratory organization will be adapted to the student's area of concentration (physiology, agriculture, medicine, etc.). Three lecture and four laboratory hours per week. Prerequisite: GSA 201c, organic chemistry. E

GSA 340-3 Ecology. C

341-3 Autecology. An introduction to plant life processes and life form in relation to the factors of the environment. Prerequisite: 320, GSA 340, or consent of instructor. Field and laboratory expenses \$5. C

GSA 345-3 Economic Botany. C

350-4 Plants in Relation to Man. A study of the basic relationships of plants to man; the history, geography, crop ecology, production, consumption, and uses of plants and plant products of economic importance. E

390-2 to 4 Readings in Botany. A course of individually assigned readings in classical botanical literature; both oral and written reports required; open only to undergraduate students. Prerequisites: concentration in botany, consent of instructor.

391-2 to 5 Special Problems in Botany. Individual laboratory or field work under supervised direction. Both written and oral discussions required. Prerequisite: concentration in botany, consent of department or division.

400-5 Plant Anatomy. An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisites: 300, 301. C

403-3 History and Principles of Plant Taxonomy. Important concepts in plant classification through the ages, and study of the International Code of Botanical Nomenclature. Consideration of the functions of genetics, evolution, morphogenesis, and ecology in taxonomy. Prerequisite: 203 or consent of instructor. May be repeated. E

404-4 The Algae (C); 404-5 The Algae (E). Structure, development, and relationships of the algae. Laboratory and some field work. Prerequisite: 300.

405-5 Mycology. Structure, development, and relationships of the fungi. Problems of economic and scientific interest stressed. Laboratory. Prerequisite: 300.

406-5 Industrial Mycology. C

411-4 The Bryophytes and Pteridophytes. Structure, development, and relationships of the liverworts and mosses, and the ferns and fern allies. Laboratory. Prerequisite: 301. C

412-4 The Spermatophytes. Structure, development, and relationships of the gymnosperms and angiosperms. Laboratory. Prerequisites: 301, 313. C

413-5 Comparative Morphology of Vascular Plants. Comparative studies of representative groups of vascular plants, including origin, structure, developmental tendencies, embryology, and fossil evidence. Three lecture and four laboratory hours per week. Prerequisites: GSA 201c, 202. E

414-5 Paleobotany. (Same as Geology 414). An introduction to the study of fossil plants emphasizing the major features of plant evolution and the applications of paleobotany to problems in the botanical and geological sciences. Lecture, laboratory, and field trips. Student cost about \$5. Prerequisite: 310 or 400 or consent of instructor. C

420-4 Physiology of Fungi. C

425-15 (5,5,5) Advanced Plant Physiology. (a) Physics of the plant, water relations, membrane phenomena, photobiology. (b) Covers the absorption, translocation, function and interaction of inorganic nutrient elements in green plants with application to forest, agronomic, and horticultural species. (c) Chemistry of the plant; anabolic and catabolic processes, photosynthesis, respiration, chemosynthesis. Prerequisites: 320, Chemistry 350, or a secondary concentration in chemistry. C

428-3 Plant Nutrition. The physiological importance of carbon, nitrogen, and phosphorus-containing compounds is stressed. Prerequisites: organic chemistry, secondary concentration in botany or agriculture. C

440-4 Ecology of Grasses and Grasslands. Structure, analysis, and dynamics of grassland communities; structure and growth of individual species. Field and laboratory work costs about \$5. Prerequisite: GSA 340 or consent of instructor. C

445-5 Ecology of Forests and Arable Lands. Forest areas in North America. De-

developmental and structural analysis of forest types. Autecology of important species. Field trips, approximate cost \$10. Prerequisite: GSA 340. C

449-3 Elements of Taxonomy. Principles of taxonomy including historical sketch, phyletic concepts, biosystematics, classical and experimental methods. Lecture. Laboratory. Prerequisite: GSA 203. C

450-3 Plant Geography. World distribution of plants related to environmental, floristic, and historical factors. Prerequisites: 3 courses in botany or geography or consent of instructor. C

451-4 Introduction to Floristics. Principles involved and methods used in the analysis of the flora of an area. Laboratory and field work. Student cost about \$5. Prerequisite: Botany 313; GSA 340. C

455-4 Medical Mycology. Fungi which are responsible for infection of man and animals. Problems of classification, identification, isolation, and activity of these fungi. Prerequisites: 405, Microbiology 100 or consent of instructor. C

456-5 Plant Pathology. (Same as Plant Industries 455.) A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of southern Illinois plants. Laboratory and field trips. Prerequisite: consent of instructor. C

457-4 Forest Pathology. Nature and control of forest and shade tree diseases. A study of tree diseases in forests, parks, streets, and nurseries. Fungi important in decay and stain of timber and its products are included. Prerequisite: consent of instructor or 456. C

470-4 Methods of Teaching High School Biology. Methods, objectives, types of courses taught in secondary school biology. Laboratory and field trips. Prerequisite: concentration in botany or zoology. C

480-4 Classic Principles of Botany. Theories, principles, and developments in the various divisions of the plant sciences. Prerequisites: GSA 203, or consent of instructor. C

501-4 Plant Biology for High School Teachers. C

502-2 Recent Developments in Biological Sciences. C

503-15 (5,5,5) Advanced Angiosperm Taxonomy. C

507-8 BSCS—High School Biology. C

522-5 Advanced Microtechnique. C

525-5 Cytology. C

526-5 Cytogenetics.

533-3 to 4 Growth and Development in Plants. C

542-3 Genecology and Community Concepts. C

543-5 Experimental Ecology. C

551-4 The Natural Vegetation of the Mississippi Basin, Upland. C

552-4 Mississippi Flora, Aquatic. C

555-4 Advanced Plant Pathology I. C

556-4 Advanced Plant Pathology II. C

557-4 Advanced Plant Pathology III. C

570-2 to 5 Readings. C

580-1 to 4 Seminar. C

590-2 to 4 Introduction to Research. C

591-3 to 9 Research. C

599-3 to 9 Thesis. C

600-1 to 48 Dissertation. C

BUSINESS EDUCATION

(See Secretarial and Business Education)

CHEMISTRY

101-2 (1,1) Optional Laboratory for GSA 101. Elementary general and organic chemistry laboratory. Prerequisite: concurrent enrollment in GSA 101b or c. C

110-4 General and Inorganic Chemistry. A brief introduction to the structure of the atom and chemical bonding; acids, bases, salts, and pH; and a study of the properties

and reactions of some of the more common elements. 3 lecture and 3 laboratory hours per week. Not applicable to a concentration or to a secondary concentration in chemistry. No prerequisite. E

111-15 (5,5,5) General-Inorganic Chemistry. For engineering students and others requiring at least 10 hours of Chemistry, including pre-professional (medicine, etc.) students and those with a concentration in Chemistry. (a) For students who have not had high school Chemistry, or upon the advice of their department, (b) beginning course for those who have had high school Chemistry, covering general principles and non-metals, (c) metals, some ionic equilibrium, and qualitative analysis. Lecture, help, and laboratory sessions. Must be taken in b,c or a,b,c sequence. C

111-15 (5,5,5) Chemical Principles and Inorganic Chemistry. (a) Nature of matter, gas laws, periodic classification, laws of combination, chemical calculations. Students with an excellent record in high school chemistry may be able to start with (b). Three lecture, one quiz, and three laboratory hours per week. Prerequisites: high school algebra and geometry or equivalent; (b) solutions, kinetics, equilibrium, electrochemistry, and chemistry of the elements. Three lecture, one quiz, and three laboratory hours per week. Prerequisite: 111a or strong background in high school chemistry; (c) continuation of chemistry of the elements, ionic equilibria, and qualitative analysis. Three lecture and six laboratory hours per week. Prerequisite: 111b. E

230-4 General Analytical Chemistry. A survey course in chemical analysis not open to students with a concentration in chemistry. A brief introduction to various analytical methods. Qualitative and quantitative measurements, including gravimetry, volumetry, colorimetry and other techniques. 2 lecture and 6 laboratory hours per week. Prerequisite: 101b (with GSA 101b) or 111b. C

235-5 General Quantitative Analysis. Introduction to theories and methods of volumetric and gravimetric techniques. 3 lecture and 6 laboratory hours per week. Prerequisite: 111c.

240-4 Organic Chemistry. A survey course not open to those concentrating in chemistry. An introduction to aliphatic and aromatic compounds with emphasis on those of biological importance. Three lecture and three laboratory hours per week. Prerequisite: 110 or 111b. E

305-9 (4,5) Organic Chemistry, Preprofessional. For secondary concentration in chemistry and preprofessional students. Lecture and laboratory. Must be taken in a,b sequence. Prerequisite: 111c. C

305-10 (5,5) Organic Chemistry, Preprofessional. For secondary concentrations in chemistry and preprofessional students. Three lecture and six laboratory hours per week. Prerequisite: 111b. E

311-3 Inorganic Chemistry. Introduction to theories of bonding and structure, symmetry, complex ions, and less familiar elements. Three lectures per week. Prerequisite: 111c. E

336-4 Analytical Chemistry. Continuation of volumetric and gravimetric theories and methods with an introduction to instrumental methods. Two lecture and six laboratory hours per week. Prerequisite: 235. E

341-15 (5,5,5) Organic Chemistry. 3 lecture and 6 laboratory hours per week. Must be taken in a,b,c sequence. Prerequisite: 111c.

350-4 Biological Chemistry. A brief introduction to metabolism, nutrition, and the chemistry of the important biological processes in plants and animals. 3 lecture and 3 laboratory hours per week. Prerequisite: 101c (with GSA 101c) or 305b or 341c. C

375-0 to 2 Senior Seminar. For seniors with a concentration in chemistry. C

375-0 to 3 Chemistry Seminar. One lecture hour per week. Prerequisite: senior standing. E

396-2 to 6 Senior Research. Investigation of a chemical problem and preparation of a thesis under the direction of a staff member. Prerequisite: senior, concentrating in chemistry, 4.0 average in chemistry, and consent of faculty. E

411-4 Intermediate Inorganic Chemistry. Modern inorganic chemistry including atomic structure, chemical bonds, complexes, and chelate structures; with emphasis on physical chemical principles. 4 lecture hours per week. Prerequisites: 460 or 461b. May be taken concurrently.

412-3 Inorganic Preparations. A study of several important types of inorganic syn-

theses. 1 lecture and 6 laboratory hours per week. Prerequisites: 235, 305b or 341c.
432-8 (4,4) Instrumental Analytical Measurements. Theory and practice of instrumental analytical measurements, including spectrophotometric, electro-analytical, and chromatographic methods. 2 lecture and 6 laboratory hours per week. Prerequisite: 461b (May be taken concurrently). May be taken in either sequence.

433-3 Intermediate Quantitative Analysis. A study of the analysis of complex materials, with emphasis on separations, functional group analysis, and instrumental applications. 2 lecture and 3 laboratory hours per week. Prerequisites: 432a or b and 461c.

444-3 Organic Reactions. An intermediate course with emphasis on monofunctional compounds. Additional topics, not included in elementary courses, will be considered. 3 lecture hours per week. Prerequisite: 341c. C

446-4 Qualitative Organic Analysis. A systematic study of the separation and identification of organic compounds by a procedure based on solubility and classification reagents. 2 lecture and 6 laboratory hours per week. Prerequisite: 305b or 341c.

447-3 Quantitative Organic Chemistry. The determination of functional groups and elements commonly found in organic compounds by selected methods of analysis; illustration of general method of procedure in the field of quantitative organic chemistry. 1 lecture and 6 laboratory hours per week. Prerequisite: 305b or 341c. C

451-11 (3, 3 or 4, 3 or 4) Biochemistry. (a) Chemistry, function, and metabolism of carbohydrates; energy metabolism, vitamins. (b) Enzymes, lipids, amino acids, proteins. Modern laboratory methods, (c) Enzyme kinetics, nucleic acids, comparative biochemistry. Prerequisite: 235, 305b, or 341c. Must be taken in a,b,c sequence. C

451-8 (4,4) Biochemistry. (a) Carbohydrates, fats and related substances, proteins and amino acids, enzymes, digestion, absorption, and detoxication. (b) The blood and lymph; acid-base regulation; metabolism of carbohydrates, lipids, and proteins; urine; calorimetry and energy metabolism; nutrition and vitamins; and hormones. Three lecture and three laboratory hours per week. Must be taken in a,b sequence. Prerequisites: 235 and 305b or 341c. E

460-5 Theoretical Chemistry. Traditional aspects of physical chemistry without the requirement of calculus. 4 lecture and 3 laboratory hours per week. Prerequisites: 235, 305b or 341c, and one year of physics or consent of instructor.

461-12 (4,4,4) Physical Chemistry. (a) Gases, liquids, solids, solutions, and homogeneous and heterogeneous equilibria. 3 lecture and 3 laboratory hours per week. (b) Chemical kinetics, electrical conductance, electromotive force, and electrolytic equilibrium. 3 lecture and 3 laboratory hours per week. (c) Chemical thermodynamics, the quantum theory, nuclear structure, photochemistry, atomic and molecular structure. 3 lecture and 3 laboratory hours per week. Prerequisites: 235 (concurrent), 341c, 12 hours of physics, and one year of calculus. Must be taken in a,b,c sequence.

464-3 Intermediate Physical Chemistry. Intermediate between the first year of undergraduate physical chemistry and advanced physical chemistry. 3 lecture hours per week. Prerequisite: 461c.

471-3 Industrial Chemistry. A survey course on modern industrial chemistry and an introduction to chemical research processes. 3 lecture hours per week. Prerequisite: 305b or 341c. C

490-2 Chemical Literature. A study description of the various sources of chemical information and the techniques for carrying out literature searches. 2 lecture hours per week. Prerequisites: 235, 305b or 341c, reading knowledge of German or consent of instructor.

496-1 to 9 Chemical Problems. Investigation of relatively simple problems under the direction of a staff member. Prerequisites: senior standing, concentration in chemistry with 4.0 average, and consent of chairman.

511-9 (3,3,3) Advanced Inorganic Chemistry. C

517-3 Laboratory Techniques in Inorganic Chemistry. C

519-2 to 30 (2 to 6 per quarter) Advanced Topics in Inorganic Chemistry. C

531-3 Theory of Quantitative Analysis. C

532-3 Instrumental Methods of Analysis. C

533-3 Industrial Analytical Methods. C

539-2 to 30 (2 to 6 per quarter) Advanced Topics in Analytical Chemistry. C

541-3 Advanced Organic Chemistry.	C
542-3 Advanced Organic Chemistry.	C
543-3 Advanced Organic Chemistry.	C
547-3 to 6 Advanced Laboratory Preparations in Organic Chemistry.	C
549-2 to 30 (2 to 6 per quarter) Advanced Topics in Organic Chemistry.	C
551-3 Advanced Biochemistry.	C
552-3 Advanced Biochemistry.	C
553-3 Advanced Biochemistry.	C
554-3 Biochemical Mechanisms.	C
555-3 Enzymes.	C
559-2 to 30 (2 to 6 per quarter) Advanced Topics in Biochemistry.	C
561-3 Chemical Thermodynamics.	C
562-3 Atomic and Molecular Structure.	C
563-3 Chemical Kinetics.	C
569-2 to 30 (2 to 6 per quarter) Advanced Topics in Physical Chemistry.	C
575-1 to 3 Graduate Seminar.	C
594-2 to 15 (2 to 6 per quarter) Special Readings in Chemistry.	C
595-0 to 9 Advanced Seminar in Chemistry.	C
596-3 to 9 Advanced Chemical Problems.	C
597-3 to 15 Research and Thesis.	C
598-3 to 48 Research—Doctoral.	C
600-3 to 48 Dissertation—Doctoral.	C

CLOTHING AND TEXTILES

- 127-4 Clothing Selection and Construction.** Fundamentals of clothing construction and fitting. Use and alteration of patterns and construction of basic garments using fabrics made of different fibers. C
- 129-1 to 4 Fashion Millinery.** Fundamentals of millinery. Experience in millinery construction; discussion and observation of demonstrations. C
- 131-3 Applied Design.** Theory of design. Judging decorative and structural design of objects. Principles and elements of design applied to our visual environment—homes, furnishings, buildings—and the person. Supplementary laboratory experiences with emphasis on color. C
- 135-3 Textiles.** Selection of textiles from consumer standpoint. Characteristics of commonly used fibers and fabrics; textile information as a tool in the selection and care of household textiles and clothing. C
- 145-1 to 4 Three Dimensional Arrangement.** Principles of selection and arrangement of designs including flowers, foliage, and other elements from nature for use in homes and other interiors. C
- 231-3 Applied Design.** The study of design of products used in interiors of homes and in clothing and textiles. Laboratory experiences in applying the principles and elements of design to two- and three-dimensional studies related to these. Prerequisite: 131, equivalent, or consent of instructor. Offered alternate years. C
- 233-3 Pattern Designing and Clothing Construction.** Principles of flat pattern design, pattern manipulation, and fitting. The making of dress patterns from master patterns. Construction of dresses using custom finishes. Field trip. Prerequisites: 127, 131, 135, or consent of instructor. C
- 251-3 Clothing Selection and Care.** Study of suitability of clothing in terms of line, design, color, texture, interest, upkeep, and cost. Offered alternate years. C
- 300-2 to 4 Display.** The application of design principles in windows, cases, department displays. Laboratory problems to provide experience in planning, execution, and evaluation of display. Prerequisite: 131, equivalent, or consent of instructor. C
- 322-3 Advanced Textiles.** A study of textile testing, fabric analysis, textiles legislation. Prerequisite: 135, GSA 101b,c or consent of instructor. Offered alternate years. C
- 323-2 Housing.** Housing needs of families. Housing design, plans, and construction. Historic modes of housing. C
- 327-3 Home Furnishings and Interiors.** Principles and elements of design related to selection and arrangement of furniture and the use of fabrics, accessories and other

media utilized in furnishing homes and their interiors. Prerequisite: 131, equivalent, or consent of instructor. C

329-3 Fashion. A study of economic, psychological, social, and aesthetic factors in fashion which affect the individual and family. Exploration into the fashion industry and opportunities in the field of fashion. Offered alternate years. C

331-3 Applied Design. Laboratory experiences in applying the principles and elements of art to textile designing. Linoleum block printing, silk screen print, contemporary embroidery, batik, tie-dye, and others. Prerequisite: 131, equivalent, or consent of instructor. Offered alternate years. C

334-3 Costume Design. The development of original dress design and adaptation from period costume and other sources, using various media. Prerequisites: 127, 131. Offered alternate years. C

339-3 Clothing Economics. Factors of production, distribution, and consumption which influence economics of clothing. Offered alternate years. C

360-4 Tailoring and Clothing Construction. Fundamental construction processes reviewed and basic principles of tailoring applied in the construction of a suit or coat and a dress. Prerequisite: 233. C

364-3 Draping and Construction. Principles of design applied to draping of fabric on dress form. Emphasis on interpretation of design in relation to different fabrics and figures. Construction of one draped garment. Prerequisite: 233. Offered alternate years. C

371-6 Field Experience. Opportunity for supervised learning experiences in the chosen area. C

380-4 Furniture and Interiors. A study of furniture in relation to interiors from antiquity through the eighteenth century. Field trip. C

381-4 The Modern Movement in Interior Design. A study of furniture in relation to interiors from the eighteenth century to the present. Field trip. C

382-4 The Decorative Arts. A study of ceramics, textiles, glass, paper, plastics, lighting and lighting fixtures, metals and hardware, selecting and hanging pictures, window treatments, floor coverings, wall treatments, and backgrounds considered in relation to problems in interior decoration. Field trip. C

390-5 Interior Design Fundamentals. Analysis and practices of interior decoration with emphasis on present-day problems and solutions. Field trip. Prerequisite: 131, 231 or consent of instructor. C

391-15 (5,5,5) Advanced Interior Design. The major problems and trends in interior design. (a) residential interiors, (b) commercial interiors for restaurants, hotels, and motels, (c) commercial interiors for transportation systems, industrial and governmental buildings. Lecture and laboratory. Field trips. Must be taken in a,b,c sequence. Prerequisites: 390 or consent of instructor. C

394-4 Professional Practice. Practical organization and methods of conducting an interior decorating business; production, management, customer relationships, and professional ethics. Prerequisite: 390 or consent of instructor. C

395-2 to 8 Special Problems. Specific problems in clothing, textiles, applied design, housing, home furnishings, or interiors. Prerequisite: consent of instructor. C

423-4 Advanced Family Housing. (See Home and Family 423.) C

431-4 Advanced Applied Design. Research problems in experimentation with materials in textile design, linoleum block printing, stencilling, contemporary embroidery, silk-screen printing, etc. Prerequisite: 131 or consent of instructor. C

432-2 to 8 Workshop. Designed to aid leaders in the field with current problems. Discussion, reports, lectures, and other methods of analyzing and working on solutions to problems. Emphasis for the workshop to be stated in the announcement of the course. Prerequisite: consent of chairman. C

433-4 Advanced Pattern Designing. Experimentation in the application of flat pattern design principles to the making of patterns for garments of various designs. Emphasis upon suitability of patterns for specific fabrics. Construction of garment as final step in experimentation. Prerequisite: 233 or consent of instructor. C

434-4 History of Costume. The history of costume from prehistoric times to the present. Social, economic, and aesthetic developments that influenced its design. C

461-4 Problems in Fitting and Pattern Alterations. Principles of fitting and pattern

alterations as related to various figure types and special figure problems. Application made by fitting and constructing a garment. Prerequisites: 127, 233, or equivalent. C
473-4 Advanced Tailoring. The student will tailor one garment for herself. Time-saving methods, high-quality construction details, and professional finishes stressed. Prerequisite: 360 or equivalent. Offered on demand. C

474-4 Advanced Textiles. The physical and chemical analysis of textiles. Problems dealing with economical and industrial developments, standards, labeling, and legislation. Current literature of developments within the field. Prerequisites: 322, GSA 101c or consent of instructor. C

481-2 to 6 Readings. Supervised readings for qualified students. Prerequisite: consent of instructor and chairman. C

528-4 Recent Developments in Clothing and Textiles. C

570-4 Clothing and Textiles Seminar. C

571-4 Recent Research. C

572-2 to 8 Special Problems. C

582-4 Foundations of Fashion. C

599-5 to 9 Thesis. C

600-1 to 48 Dissertation. C

COMPARATIVE LITERATURE

300-12 (4,4,4) Survey of Comparative Literature. (a) from Homer to Dante. (b) from Rabelais to Racine. (c) from Voltaire to Kafka. E

310-20 (4,4,4,4,4) Comparative Literature: Genres. (a) lyric and epic poetry. (b) drama. (c) prose. (d) tragedy. (e) novel. E

399-4 Traditional Themes of World Literature. Prerequisites: any course in comparative literature and a course in English, foreign, or comparative literature. E

DESIGN

(For Edwardsville courses, see Art.)

100-5 to 15 Design Fundamentals. Three-quarter sequence. Comprehensive workshop and lecture course in design fundamentals. Exploration of two- and three-dimensional design principles using various media and materials. C

200-2 to 6 Materials and Basic Techniques. Three-quarter sequence. Laboratory exploration of two- and three-dimensional materials utilized in design process. No more than 2 hours per quarter. Prerequisite: 100-15. C

215-4 to 12 Basic Product-Shelter Design. Three-quarter sequence. Development of an analytical approach to the solutions of product and shelter problems, using lecture, text, and laboratory methods. Prerequisite: 100-15. C

250-2 Survey of Product-Shelter Design. Presents basic material offered in 215 but adapted to interests of those who do not have a concentration in design. One hour lecture and two hours laboratory. C

260-2 Survey of Visual Design. Presents basic material offered in 275 but adapted to interests of those not majoring in design. One hour lecture and two hours laboratory. C

275-4 to 12 Basic Visual Design. Three-quarter sequence. Development of an analytical approach to the solution of visual problems, using lecture, text, and laboratory methods. Prerequisite: 100-15. C

300-2 to 6 Materials and Basic Techniques. Three-quarter sequence. A continuation of 200. Prerequisite: 200-6. C

345-4 to 12 Design Studio. Special projects in two- and three-dimensional experimental structures. C

366-5 to 15 Product-Shelter Design. Three-quarter sequence. Development of three-dimensional design projects of community scope. Prerequisites: 200-6, 215-12, 275-12. C

375-5 to 15 Visual Design. Development of design projects exploiting various communications media. Prerequisites: 200-6, 215-12, 275-12. C

390-2 Principles of Design. Comparative studies of European and Asiatic influences

on contemporary American approaches to design. Readings from Sullivan, Wright, Le Corbusier, Moholy-Nagy, and others. C

400-0 to 2 **Materials and Basic Techniques.**

465F-5 to 15 **Research in Product-Shelter Design.**

465G-5 to 15 **Research in Visual Design.**

490F-2 to 12 **Studio in Product-Shelter Design.**

490G-2 to 12 **Studio in Visual Design.**

520-4 to 10 **Educational Tool Systems.**

530-4 to 12 **Studies in the Industrial Process.**

535-4 to 12 **Research in Product Design.**

540-4 to 12 **Studies in Communications Design.**

545-4 to 12 **Research in Communications Design.**

550-2 to 16 **Field Study in Design.**

560-4 to 12 **Environmental Control.**

570-4 to 12 **Design Science Exploration.**

575-4 **World Ecological Studies.**

576-4 to 8 **Structural Evolution.**

599-3 to 9 **Thesis.**

E C O N O M I C S

210-5 **Principles of Economics.** The basic principles and tools of economic analysis including national income determination, business fluctuations, price-output determination in product markets, distribution of national income, factor pricing, and other economic problems. Prerequisite: GSB 211a. E

214-3 **Economics (Macro).** Explores more fully some of the topics introduced in GSB 211a and brings in others such as: national income; money & banking; economic fluctuations; government fiscal policy; economic growth. Prerequisite: GSB 211a. C

215-3 **Economics (Micro).** Explores more fully some of the topics introduced in GSB 211a and brings in others such as: supply, demand, prices, theory of the firm, labor, rent, interest, profits. Prerequisite: GSB 211a. C

301-1 to 6 **Economic Readings.** Readings in books and periodicals in a defined field, under direction of one or more staff members. Periodic written and oral reports. Prerequisite: consent of chairman or division head.

308-4 **Economics and Business Statistics I.** 3 hours lecture; 2 hours laboratory. Prerequisite: GSD 110 (C); 307 or GSD 114d. (E)

310-4 **Labor Problems.** Prerequisites: 210 (E); or 214 and 215 (C).

GSB 311-3 **Economic Development of the United States.** Prerequisite: GSB 101c or 211c.

GSB 312-3 **Comparative Economic Systems.**

GSB 313-3 **Economics of War and Peace.** C

315-4 **Money and Banking I.** Prerequisite: 210 (E); 206 or 214 (C).

317-4 **Economic History of the United States.** Prerequisite: 205 or 214 at Carbon-dale; 210 (E).

328-4 **International Economics I.** Prerequisite: 210. E

330-4 **Public Finance.** Prerequisite: 210 (E) or 214 or GSB 211c (C).

GSB 333-3 **Seminar in Problems of War and Peace.** C

340-3 **Public Utility Economics.** Prerequisites: 205 & 206; or 214 & 215. C

GSB 356-3 **The Consumer and the Economy.** E

408-4 **Economic and Business Statistics II.** Techniques for making decisions when the economic conditions are not known with certainty. 3 hours lecture; 2 hours laboratory. Prerequisite: 307 or GSD-110, or GSD-108c, or GSD-114c, or consent of instructor (C); 307 or 308 or GSD-114d, or consent of instructor (E).

411-4 **Collective Bargaining and Dispute Settlement.** Nature, issues, procedures, economic effects. Prerequisite: 310 or consent of instructor.

416-4 **Money and Banking II.** Emphasis upon the Federal Reserve System and other banking systems. Prerequisite: 315 or consent of instructor.

418-4 Economic History of Europe. A survey of the economic growth of Europe with emphasis upon the development of European agriculture, industry, finance, and international trade since 1750. Prerequisites: 205 or GSB-211a, or consent of instructor (C); 210 (E).

419-4 Latin American Economic Development. A survey of the resource base of Latin American economic development with special reference to the problems of transition from an export-import to an integrated industrial economy; monetary policies; problems of economic planning. Prerequisites: 205 or GSB-211a. C

429-4 International Economics. Intensive treatment of the principles of international economics with special emphasis on the classical and modern theories of international trade. Income effects. Balance of payments adjustments. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor. C

430-4 Regional Economy. Natural economic regions, governmental action (as in the T.V.A.), local applications. Prerequisites: (205 and 206) or (214 and 215). C

431-3 Public Finance II. State and local. Prerequisite: 330 or consent of the instructor.

432-3 to 4 Fiscal Policy of the United States. Countercyclical, secular, and emergency use of government expenditures, debt, and taxes. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor (C); 210 (E).

436-3 Government and Labor. (Same as Government 436.) A study of labor relations and legislation considering both constitutional and economic aspects. Prerequisite: 205 or 215 (C) or GSB-211c or consent of instructor (E).

440-4 Intermediate Micro Theory. A more intensive treatment of price and income theory. Prerequisites: 205 and 206, or 215, or consent of instructor (C); 210 (E).

441-4 Intermediate Macro Theory. Basic analytical concepts of the modern theory of aggregative income determination. Prerequisites: 205 or 214 or consent of instructor (C); 210 (E).

450-6 (3,3) (C); 450-3 (E) History of Economic Thought. The development of economic thought; (a) ancients to 1850; (b) 1850 to present. Must be taken in a,b, sequence. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor (C); 210 or consent of instructor (E).

460-4 Russian Economy. Development of Russian trade, agriculture, industry, government, finance, and standards of living in successive periods in relation to the historical, geographic, economic, and ideological background. Prerequisite: 205, or GSB-211a, or consent of instructor. C

461-4 Comparative Economic Development in Asia. A comparison of the economies of Japan, India, and China within the framework of emerging economic theory of developing economies. Prerequisite: 205, or GSB-211a, or consent of instructor. C

465-4 Mathematical Economics I. A systematic survey of mathematical economic theory. Conditions of static equilibrium (including stability conditions), dynamic models using difference equations, and linear production models of input-output analysis and activity analysis (linear programming). Prerequisite: 440 and consent of instructor. C

467-4 Econometrics I. Introduction to resource allocation under uncertainty. Probabilistic economic models, theory of games and economic choices, and stochastic economic processes. Prerequisite: consent of instructor. C

470-3 Business Cycles. Major business fluctuations in the United States. Prices, employment, production, credit, inflation and deflation, and government action during the cycles. Prerequisite: 315, or 441, or consent of instructor (C); 315 (E).

471-4 Land Resource Planning. (Same as Forestry 471 and Agricultural Industries 471.) The use of land as an economic variable in production of goods and services; land market; group versus individual conflicts; elementary land resources planning techniques. Prerequisite: 440, or 441, or Agricultural Industries 350, or Forestry 470. C

473-4 Business Enterprise and Public Policy. Some of the major problems of social control of business arising out of the operation of business in modern society; covering types of control, necessity and effects of control. Prerequisite: senior standing. E

481-4 (C); 481-3 Comparative Economic Systems (E). Capitalism, socialism, fas-

cism, and other forms of the economy. Prerequisite: 205, or 214 and 215, or consent of instructor (C); 210 (E).

490-4 Workshop in Economic Education. (Same as Elementary or Secondary Education 490.) Designed to assist elementary and secondary school teachers in promoting economic understanding in the minds of their students through the translation of economic principles and problems into classroom teaching materials.

500-4 to 8 Economics Seminar.

501-1 to 5 Economics Readings.

502-1 to 6 Readings in Resource Economics.

512-4 Labor Economics.

517-4 Monetary Theory and Policy.

519-4 Economic Growth.

530-4 Foreign Trade and Finance.

531-4 Seminar in International Economics.

533-4 Public Finance Theory and Practice.

541-4 National Income Theory.

542-4 Price Theory.

543-4 Seminar in Economic Policy.

552-4 Seminar in Economic Thought.

562-4 Seminar in Economic Systems.

566-4 Mathematical Economics II.

575-4 Economic Regulation.

581-4 Economics of Welfare.

582-0 to 4 Economic Behavior.

599-2 to 9 Thesis.

600-3 to 48 Doctoral Dissertation.

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EDUCATIONAL ADMINISTRATION AND SUPERVISION

GSB 331-3 The American Educational Systems.

355-4 Philosophy of Education. (Same as Philosophy 355.) The philosophical principles of education and the educational theories and agencies involved in the work of the schools.

420-4 Legal Basis of American Education. Particular emphasis is placed on common-law principles. Prerequisite: 424.

424-4 School Administration. Designed primarily for those who look forward to positions as supervisors, principals, or superintendents. Prerequisite: 460. C

431-4 History of Education in the United States. An historical study of the problems of American Education which have relevance to contemporary education.

432-4 Education and Social Forces. Analysis and classification of propaganda. Designed to show how public opinion is formed by a use of current materials from the different channels of communication. Differences between propaganda and indoctrination.

434-4 Administrator's Workshop. A special program for the consideration of administrative problems pertinent to superintendents, high school principals, and elementary school principals. Prerequisite: 424. C

456-4 School Supervision. The function of the principal or supervisor in the improvement of instruction. Some activities, methods, and devices for improving the effectiveness of teaching. Prerequisites: 424, and 535 or Elementary Education 557 or Secondary Education 564.

460-4 Curriculum. Modern practices and procedures in curriculum development, with attention to the professional, social, economic, and other major factors in curriculum planning. Prerequisite: 500. C

485-4 to 9 Educational Utilization of Community Resources. A workshop providing an opportunity for teachers to acquire a detailed knowledge of community resources, construct teaching units utilizing these resources and assemble files of resource materials dealing with economic and social problems of the community.

500-4 Research Methods.	
501-0 to 4 Seminar in Educational Administration.	
502-4 Seminar in Comparative Education.	
502S-4 Seminar in Comparative Education: Soviet Russia.	C
503-0 to 4 Seminar in Philosophy of Education.	
504-4 Seminar in History of European Education.	
506-4 Seminar: Curriculum in Relation to American Culture.	
507-12 (4,4,4) The Twentieth Century and Education.	C
511-12 (4,4,4) Internship Practicum.	C
520-4 Illinois School Law.	
524-4 School Administration.	E
525-4 Personnel Administration.	E
527-4 to 6 Administrative Problems of Small Schools.	C
533-4 School Buildings.	
534A-4 School Finance.	
534B School Business Administration.	
535-4 Research in Problems of School Administration.	C
539-4 Community Development Through the School.	C
554-4 Contrasting Philosophies of Education.	
556-4 Seminar in Educational Supervision.	
560-4 Curriculum.	E
563-4 Workshop in School Public Relations.	
565-4 The Junior College.	E
575-1 to 4 Individual Research.	
576-1 to 4 Readings in Administration and Supervision.	C
589-2 to 12 General Graduate Seminar.	C
591-4 Seminar—Social and Philosophical Foundations.	C
596-5 to 9 Independent Investigation.	
597-1 to 3, 598-1 to 3, 599-1 to 3 Thesis.	C
600-1 to 48 Dissertation.	C

ELEMENTARY EDUCATION

000-0 Reading and Study Techniques. A service course to aid students in improving reading and study skills. Time schedules, general principles of effective study, improving reading, making notes, etc.	C
100-3 Introduction to Elementary Education. A thorough investigation of the factors which are involved in teaching in the elementary school.	C
203-3 Understanding the Elementary School Child. Concepts needed to understand the child in the elementary school situation. Two hours lecture and two hours observation. Prerequisite: GSB 201c.	
309-3 Kindergarten-Primary Social Studies Methods. The objectives and methods of teaching social studies at the kindergarten-primary level, culminating in the planning of a unit of work. Prerequisite: 316.	C
314-4 Elementary School Methods. The fundamental principles of education, the interpretation of current educational theory and practice, the processes of teaching and learning involved in elementary education. Prerequisite: Guidance 305.	
316-4 Kindergarten-Primary Methods and Curriculum. Philosophy and principles underlying the teaching of four-to-eight-year-olds. Emphasis upon organization, equipment, materials and methods for promoting growth of young children. Prerequisite: Guidance 305.	
337-4 Reading in the Elementary Schools. The principles of reading, factors that condition reading, together with grade placement of aims and materials; diagnostic and remedial treatment. Prerequisite: 314.	
350B-4 to 16 Kindergarten-Primary Student Teaching.	C
350D-8 to 12 Kindergarten-Primary Student Teaching.	E
350E-4 to 8 Advanced Kindergarten-Primary Student Teaching. Prerequisite: 350D.	E
351A, 351B, 351C-4 to 16 Elementary Student Teaching.	C

- 351D-8 to 16 **Elementary Student Teaching.** E
- 351E-4 to 8 **Advanced Elementary Student Teaching.** Prerequisite: 351D. E
- 401-2 to 4 **Problems in Public School Reading.** Requirements: attendance at all sessions of a reading conference; preparation of a paper showing practical applications of theory to the student's own teaching situation. Summer. C
- 402-4 **Aerospace Education Workshop.** (See Secondary Education 402.) C
- 410-4 **Improvement of Instruction in Arithmetic in Kindergarten-Primary Grades.** Recent findings and current practices in building a basis for quantitative thinking in early childhood education. Special emphasis upon grade placement of content and of techniques to aid children in understanding of the number system. Prerequisite: Mathematics 210. C
- 411-4 **Seminar in Instruction.** To assist student teachers and in-service teachers in solving classroom problems. Involves clinical study and discussion of behavioral and learning situations, with special attention to the development of characteristics and needs of students. C
- 413-4 **Children's Literature.** Emphasizes types of literature, analysis of literary qualities, selection and presentation of literature for children. Not for students who have had English 213. Prerequisite: Guidance 305.
- 415-2 to 4 **Improvement of Instruction in Arithmetic in the Elementary School.** Items to be taught, the grade placement of content, newer instructional practices and materials of instruction, and means of evaluating achievement. Prerequisite: Mathematics 210 or consent of instructor.
- 430-3 **Workshop in Creative Writing in the Elementary School.** Techniques of encouraging creative writing in the elementary school. C
- 433-4 **Workshop in Kindergarten-Primary Education.** Meets needs of in-service teachers in such areas as curriculum adjustment, remedial teaching, child development, and early childhood education. No credit if student has had 333 or 390.
- 435-4 to 8 **Workshop in Elementary School Foreign Language Instruction.** Designed to assist elementary school teachers in integrating foreign languages into their teaching program as well as to encourage high school teachers to introduce or supervise foreign languages or education. Prerequisite: basic language credit.
- 437-4 **Problems in Reading.** Practices and trends in the teaching of reading; materials of instruction in reading, particularly remedial materials; techniques and materials for prevention of reading difficulties; diagnosis and remediation of reading difficulties. Prerequisites: senior standing, 337. Not open to students having had 505.
- 441-4 **Teaching Elementary Science.** A workshop course for teachers of elementary school science. C
- 442-4 **Science for the Elementary Teacher.** Study of content and methods of elementary school science.
- 443-4 **Workshop in Social Studies.** Material on critical areas of the world, not commonly emphasized in elementary social studies. Areas considered; significant geographical concepts, Asia, Africa, Russia, and Eastern Europe. Outstanding specialists in social science present their specialties. C
- 465-4 **Seminar in Psychology of Elementary School Subjects.** Psychological principles of learning applied to the mastery of materials used in elementary school subjects. Prerequisites: 314, Guidance 305.
- 490-2 to 3 **Workshop in Economic Education in Elementary Schools.** A study of newer programs stressing economic understandings of the social studies in the elementary school. C
- 505-4 **Improvement of Reading Instruction.**
- 507-2 to 4 **Readings in Reading.**
- 509-4 to 8 **Practicum in Reading.**
- 510-4 to 8 **Seminar: Problems in Reading.** C
- 514-4 **Organization and Administration of Reading Programs.**
- 515-4 **Special Problems in the Teaching of Arithmetic in the Elementary School.**
- 516-8 to 12 **Internship in Reading.** C
- 517-2 to 4 **Kindergarten-Primary Practicum.** C
- 518-2 **Supervision of Student Teachers.**

- 521-9 (3,3,3) (C); 521-3 to 4 (E). **Diagnosis and Correction of Reading Disabilities.** C
- 525-4 **Kindergarten-Primary Seminar.** C
- 537-4 **Kindergarten-Primary Reading.** C
- 541-4 **Selected Teaching and Curriculum Problems in Elementary School Science.**
- 542-3 to 4 **Language Arts in the Elementary School.**
- 543-4 **Teaching the Social Studies in the Elementary School.**
- 557-4 **The Elementary Principalship.**
- 558-3 to 4 **Leadership in Elementary Education.** C
- 559-3 **Workshop in Instructional Leadership.**
- 560-4 **Kindergarten-Primary Education.** C
- 561-4 **The Elementary School Curriculum.**
- 563-4 **Organization of the Elementary School.**
- 570-4 **Seminar, Research in Elementary Education.** C
- 575-2 to 4 **Individual Research.**
- 596-5 to 9 **Independent Investigation.**
- 597-1 to 3, 598-1 to 3, 599-1 to 3 **Thesis.** C
- 600-1 to 48 **Dissertation.** C

ENGINEERING

- 222-3 **Digital Computer Programming for Engineers.** Programming of digital computers in a problem-oriented language (FORTRAN). Problems solved will illustrate some of the elementary methods of numerical analysis. Prepares the student to use digital computers in later courses. Includes programming of a computational problem from inception to completion: formulation and analysis, flow charting, coding, check-out, documentation. Prerequisite: Mathematics 150b. C
- 260-9 (3,3,3) **Analytical Mechanics.** (a) Resultants of force systems, algebraic and graphical conditions of equilibrium of force systems; analysis of forces acting on members of trusses, forces due to friction; centroids. (b) Displacement, velocity, and acceleration of a particle; translation, rotation; plane motion. (c) Solutions using the principles of force, mass and accelerations, work and energy, and impulse and momentum. Must be taken in a,b,c sequence. Prerequisite: Mathematics 150b, or concurrently. C
- 300-9 (3,3,3) **Thermodynamics.** (a) The study of fundamental energy concepts and the laws of thermodynamics, availability of energy, properties of gases, vapors and gas-vapor mixtures, flow and non-flow processes. (b) Engine cycles and applications to internal combustion engines, gas turbines, steam turbines, jet devices, air compressors, and air engines. Combustion refrigeration and air conditioning. (c) Axiomatic thermodynamics, criteria for equilibrium; absolute temperature; Maxwell's relations; open systems; the phase rule; systems of one and two components; idealized systems; equations of state; systems involving chemical and electrochemical equilibrium. Must be taken in a,b,c sequence. Prerequisite: Mathematics 252a. C
- 302-6 (3,3) **Heat and Mass Transfer.** (a) Dimensional analysis and its application to the theory of heat transfer. Mathematical and graphical methods of analyzing problems in conduction, convection, and radiation. Particular attention to the applications of heat transfer principles used in various processes. (b) A study of the theory related to all types of heat power equipment. The design calculations for various components of heat power machines such as steam and gas turbines, air compressors, pumps, refrigeration, and air conditioning equipment. Must be taken in a,b, sequence. Prerequisite: 300a,b. C
- 305-12 (3,3,3,3) **Architectural Engineering Design.** (a) An introduction to the profession of architecture; work illustrating basic architectural forms and their organization. (b) A study of architectural planning, composition, and sketching. (c) A study of the fundamentals of architectural design. (d) A study of architectural planning of contemporary architectural problems. Must be taken in a,b,c,d sequence. Prerequisite: 260a,b,c. C
- 311-9 (3,3,3) **Engineering Materials.** (a) Stress and strain in the elastic as well as

the plastic states. Failure theories. Elastic and plastic torsion. Thick cylinders and rotating discs. Energy methods. Beams on elastic foundations. Introduction to plates and shells. Limit design. (b) Mechanics of continua for elastic, plastic, viscoelastic, and creeping materials, limit analysis, applications to brittle, ductile, and transitional modes of fracture, to creep, fatigue, friction, and wear. Laboratory emphasizing student-planned projects. (c) Physical and chemical properties of all types of materials; influence of these properties on behavior of materials under various structural, magnetic, dielectric, heat, and other environmental conditions. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 260a,b,c. C

313-6 (3,3) Fluid Mechanics. (a) A broad introduction to concepts, principles, and methods of fluid dynamics. Model and properties of the continuum. Continuity, momentum, and energy equations for the system and the control volume. Kinematics of fluid motion. Equations of motion of nonviscous fluid, and their integration. Potential flows. Navier-Stokes equations for viscous fluids, and applications. Boundary layers, turbulence, and drag. Lift, dimensional reasoning, and similitude. (b) Introduction to theoretical fluid mechanics. Forces on floating and submerged bodies, equations of motion, dynamic similarity, laminar and turbulent flow, skin friction, flow resistance in conduits, cavitation and propulsion, drag, circulation and principles of turbomachinery. Must be taken in a,b sequence. Prerequisite: 260a,b,c. C

321-9 (3,3,3) Physical Metallurgy. (a) The elementary physics of metals, constitutional diagrams, equilibrium and non-equilibrium conditions. The properties of metals and alloys as related to structure. (b) A study of the internal structure, treatment, and properties of iron, plain carbon steel, and cast iron. (c) Properties of x-rays and x-ray diffraction; the structure of polycrystalline aggregates of alloys; precise lattice-parameter measurements; chemical analysis by x-rays; measurement of grain sizes; pole figures and orientation determinations; determination of phase diagrams with x-rays; superlattices; the structure of cold-worked metal and preferred orientations resulting from cold work and after annealing; orientations in castings and deposited films. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 311a. C

331-12 (4,4,4) Circuit and Field Theory. (a) Introduction to the theory of circuits. Study of network theorems, sources of electrical energy, basic electric measurements, magnetic circuits. (b) Solution of electric and magnetic fields of simple geometry. Study of Coulomb's Law, Gauss' Theorem, Maxwell's equations for static fields by vector methods. (c) Vector analysis, electrostatics, space charge flow, steady magnetic fields, Maxwell's equation, uniform plane waves, circuits concepts, transmission lines, dipole radiation, field theory of rotating machinery and transformers. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Mathematics 252b. C

333-9 (3,3,3) Electrical Energy Conversion. (a) The principles and physical aspects of electromechanical energy conversion and the basic concepts of machine performance; analysis and performance of D.C. machines. (b) Basic theory of transformers, analysis of performance of synchronous and induction machines. (c) Analysis of performance of fractional-horsepower motors, control-type generators and self-synchronous machines, dynamics of electromechanically-coupled systems, magneto-hydrodynamics, and other energy conversion methods. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 331a,b,c. C

334-9 (3,3,3) Microwave and Antenna Theory. An advanced study of electromagnetic fields, a study of the modes of propagation of electromagnetic energy of short wave length through guided ducts and the radiation of this energy into space. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 331a,b,c. C

335-9 (3,3,3) Electronics. (a) An introduction to electronics for all students of engineering. A foundation for more advanced studies in electronics. (b,c) Electron tube theory, amplifiers, modulation, vacuum tube and transistor circuits. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 331a,b,c. C

341-3 Mechanical Vibrations. Equations of motion applied to systems with free and forced vibrations, damping, multiple-degrees of freedom. Applications to engines and rotating machinery. Prerequisite: 260a,b,c, Mathematics 252b. C

343-9 (3,3,3) Engineering Design. Projects of a research design or development nature. The student will select a problem, develop the theory for a solution, check

the theory experimentally, analyze the data, and compare the results. The project can be from one to three quarters in length. Laboratory. Must be taken in a,b,c sequence. Prerequisites: 300, 311, 331(a,b,c). C

344-9 (3,3,3) Structures. (a) Analysis of statically determined structures under stationary and moving loads. Application of the theory of statically determinate structures to stress and deflection computations. (b) Fundamental theory of statically indeterminate structures to the evaluation of deformations, reactions and moments in continuous structures. (c) Introduction to design. Must be taken in a,b,c sequence. Prerequisite: 260a,b,c. C

346-6 (3,3) Concepts of Energy Release. (a) A study of various energy conversion principles. The theory and application of energy release to conventional devices. (b) Thermodynamics analysis of low temperature phenomena. Solar energy and the concepts of thermonuclear power. Must be taken in a,b sequence. Prerequisite: 300a,b,c. C

350-6 (3,3) Analog and Digital Computer Design. An introduction to the design of analog and digital computers. Subjects include: operational amplifiers, multiplying circuits, regulated power supplies, Boolean algebra, switching circuits, memory devices. Not a course in programming. Must be taken in a,b sequence. Prerequisites: 335, Mathematics 252b. C

351-6 (3,3) Electromechanical Design. Develops and makes use of the mechanical and electrical knowledge of the student in the synthesis of complete control systems, to train students for careers in creative automation. Must be taken in a,b sequence. Prerequisite: 335a,b,c. C

352-6 (3,3) Electronic Device Design. (a) Helps students use the latest electronic devices in designing circuits and equipment. (b) The use of tunnel diodes, lasers, masers, traveling wave tubes in the design of equipment. Emphasis will be on total design concept. Laboratory. Must be taken in a,b sequence. Prerequisite: 335a,b,c. C

361-4 Engineering Economics. (Same as Engineering Technology 361.) A study of factors and methods involved in selecting the most economical and feasible plan in industrial and engineering ventures considering both the business and technical aspects involved. Prerequisite: junior standing.

370-4 Theory of Stochastic Processes. Concept of a stochastic process. Renewal theory. Markov processes with application to reliability of systems, queues, and other problems of engineering interest. Related statistical problems. Prerequisite: 300a,b,c. C

401-9 (3,3,3) Principles of Propulsion. (a) The basic principles of propulsion dynamics. (b) The thermodynamics of fluid flow and application to propulsion engines. (c) An extensive treatment of the technological problems in the design of propulsion systems. Must be taken in a,b,c sequence. Prerequisite: 300a,b,c. C

406-3 Statistical Mechanics. Introductory subject for graduate engineering students. Classical mechanics of systems of particles and motion in phase space. Quantum mechanical concepts and energy of microscopic systems. Most probable distribution. Determination of thermodynamic properties of gases, crystals, black body radiation field. Fluctuation theory. Application to plasmas, thermionics, masers, cryogenics. Prerequisites: 461, Mathematics 305b. C

412-9 (3,3,3) Engineering Practice. (a) Written communication encountered in engineering organizations; correspondence, memoranda, technical papers, specifications, and reports. Lectures, conferences, and frequent written assignments are adapted to the individual needs of each student. (b) The law of contracts with enough emphasis on legal procedure to enable students to understand decided cases. The study of the legal material will be followed by practice in applying some of the principles. (c) Research methods. Prerequisite: 361. C

413-6 (3,3) Intermediate Mechanics of Fluids. (a) Application of the basic laws of nature to the theory of fluids using the continuum approach. Kinematics of fluid motion using various coordinate systems. Dynamics of viscous fluid motion with some solutions to the fundamental system of equations. (b) Vorticity, stream functions and the velocity potential. Incompressible irrotational flow. The compressible flow equations and an introduction to the theory of homogeneous turbulence. Must be taken in a,b sequence. Prerequisites: 313a,b, Mathematics 305A. C

415-9 (3,3,3) Water Supply and Waste Water Disposal. (a) A study of the principles involved in the collection, storage, treatment, and distribution of water for its myriad uses. (b) The fundamental principles involved in waste water treatment and disposal. (c) Application of basic concepts to unit process design and operation for both water and waste water treatment facilities. Must be taken in a,b,c sequence. Prerequisite: consent of instructor. C

420-9 (3,3,3) Transport Phenomena. (a) Mechanism of heat, mass and momentum transport on both molecular and continuum basis. Estimation of transport properties. Generalized equations of transport in one or three dimensional system. (b) Interphase transport in isothermal and nonisothermal systems. Unsteady state transport problems in multicomponent systems. Mechanism ratio analysis. Analogy of mass, heat and momentum transfer. (c) Macroscopic balances, diffusion operations, penetration theory, simultaneous mass and heat transfer, equilibrium operations. C

422-4 Operations Research and Mathematical Model Formulation. C

423-3 Hybrid Computation. The simultaneous use of the analog and the digital computer for the solution of engineering problems. Scaling of problems. Block diagrams and logic are stressed. Linear and non-linear differential equations. Simulation as well as iterative analog computation are covered. Prerequisites: 222 or Mathematics 225. C

439-6 (3,3) Transient Analysis. A study of electrical and mechanical networks by means of the Laplace Transform. Theoretical vibration problems in the real and complex time domain, as they apply to engineering will be discussed. Prerequisites: 335a,b,c, Mathematics 305b. C

445-9 (3,3,3) Structural Design. (a) General principles of structural design. Probabilities of failure or unserviceability. Factor of safety. Ultimate versus elastic design. Stress control and erection of indeterminate structures. Economics and preliminary planning of structures. Approximate analysis of beams, trusses, frames, and slabs. Preliminary design of intermediate structures. (b) Consideration of behavior and modes of failure of typical metal structures, structural components, and connections as affected by design features, service conditions, and material properties. Comprehensive review of methods of plastic analysis and design of steel structures. Correlation of buckling behavior of structures and structural members with buckling criteria and requirements. (c) An introduction to the design of reinforced concrete structures, behavior of beams, columns and frames, proportioning of members. Laboratory. Must be taken in a,b,c sequence. Prerequisites: 311a,b,c, 344a,b,c. C

446-9 (3,3,3) Mechanical Energy Conversion. (a) Modern power plant cycles, pumps, fans, fuels, steam generator boiler auxiliaries, and heat exchangers. (b) A detailed study of the design and operation of steam turbines. (c) The theory and design of gas turbines and jet engines. Must be taken in a,b,c sequence. Prerequisite: 346a,b. C

460-8 (4,4) Engineering Analysis for Decision Making. (a) An analytical approach to economic aspects of professional engineering practice. Fundamental techniques for economy studies including cost control, investment studies, replacement theory, depreciation, valuation and taxation. (b) Tools for developing qualitative and quantitative models for decision-making based on concepts of operations research and game theory. Application of these concepts to problems in marketing, production, and administration. Prerequisites: Mathematics 252b and Engineering 361, or consent of instructor. C

461-6 (3,3) Advanced Mechanics. (a) Stress and strain at a point in three dimensions. Introduction to the theory of elasticity with examples of solutions in two dimensions. Consideration of bending of flat plates; energy methods in elasticity; elastic stability problems. (b) The foundation of dynamics leading to Lagrange's equations and Hamilton's principle. Gyroscopic effects in mechanical systems. Analysis of the stability of steady motions. Self-excited vibrations and non-linear vibrations. Must be taken in a,b sequence. Prerequisite: 260a,b,c. C

462-6 (3,3) Theory of Elasticity. (a) The linear theory of homogeneous, isotropic; elastic media. Analysis of stress and strain. (b) The solution of differential equations of elasticity by numerical inverse, energy, and complex variable methods. Must be taken in a,b sequence. Prerequisite: 461. C

502-9 (3,3,3) Advanced Heat Transfer. C

503-9 (3,3,3) Heating and Cooling Systems.	C
510-9 (3,3,3) Electromagnetic Fields.	C
511-6 (3,3) Quantum Electronics.	C
512-8 (4,4) Continuum Mechanics.	C
513-9 (3,3,3) Fluid Mechanics.	C
516-4 Water Resource Development.	C
517-12 (4,4,4) Analysis and Design of Engineering Systems.	C
520-9 (3,3,3) Reaction Engineering and Rate Processes.	C

ENGINEERING TECHNOLOGY

301-9 (3,3,3) Refrigeration and Air Conditioning. (a) Discussion of refrigerating cycles. Refrigeration at more than one level. Operation and ratings of various types of compressors, evaporators, condensers, and automatic controls used in commercial refrigerating systems. Heat flow problems in condensers, evaporators, and cooling towers. (b) Control of temperature and humidity in buildings, or other large areas. Air handling equipment, duct systems, and air distribution within the space. Fundamental principles and techniques for cooling and dehumidification for comfort. Equipment and control systems. (c) Physiological aspects of air conditioning. Air and water vapor mixtures, load estimates for heating, boilers, radiators, and heating systems. Complete and part air conditioning systems, including air handling equipment. Must be taken in a,b,c sequence. Prerequisite: Engineering 300a. C

303-9 (3,3,3) Electronics Technology. A study of the application of electrical and electronic controls to the generation and regulation of power conversion. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c. C

304-9 (3,3,3) Electrical Circuits. The principles of electrical science as applied to modern industry. A study of magnetic circuits. Principles of D.C. and A.C. circuits. The fundamental laws of current flow. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Mathematics 252a. C

308-9 (3,3,3) Machine Design. (a) Applications of the principles of mechanics to problems of design and development, mechanisms for specific functions, dynamic effects and friction in mechanisms. (b) Strength and safety considerations in design of machine parts. Fatigue and stress concentrations; power transmissions, bearings, brakes, clutches, and springs. (c) Combined stresses; helical, bevel, and worm gearing; curved beams, thick cylinder and flat plates; high-speed cams. The student puts previous studies into practice by design of a complete machine. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Engineering 260a,b,c. C

310-9 (3,3,3) Construction Mechanics. (a) A study of construction methods, the forces involved in the management of machinery and manpower. (b,c) The dynamics of estimating, scheduling and controlling procedures. Must be taken in a,b,c sequence. Prerequisite: Engineering 260a,b,c. C

314-9 (3,3,3) Soil Mechanics. (a) Mechanics of soil masses; soils as engineering materials. Soil identification and testing. (b) Shearing resistance and consolidation of soils, deformations with an analytical review of the theoretical concepts, results of laboratory materials, including cement, foundation, and surfacing materials. Use of X-ray diffraction and Debye-Scherrer camera equipment. Influence of mineral constituents on soil behavior and design. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Engineering 311a,b,c. C

318-6 (3,3) Hydraulics. (a) The fundamentals of fluid statics, open channel flow and flow measuring equipment. (b) The design of fluid machinery. Analysis of hydraulic and pneumatic systems for response characteristics. Response studies on pumps, motors, and valves. Laboratory. Must be taken in a,b,c sequence. Prerequisites: Engineering 260a,b,c, 300a. C

320-9 (3,3,3) Mechanical Engineering Laboratory. (a) A study of various types of measuring instruments. (b) Fuels and lubricants testing and exhaust gas analysis. (c) A study of the characteristics of internal combustion engines, steam turbines, compressors, pumps, fans, and refrigeration systems. Report writing. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Engineering 300a. C

322-6 (3,3) Internal Combustion Engines. (a) The design and principles of opera-

tion of internal combustion engines. The Otto, Diesel, and Brayton cycles and the fundamental thermodynamic laws involved. (b) Theories of combustion and detonation, combustion charts, fuels, and air tables. Effects of chemical equilibrium and variable specific heats. Cetane and octane numbers; carburetion and injection. Must be taken in a,b sequence. Prerequisite: Engineering 300b. C

332-9 (3,3,3) Electrical Machinery. (a) Introduction to direct and alternating current machinery. Theory and operating characteristics. (b) Advanced studies on polyphase alternators, motors, machinery, and power generation. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c. C

336-9 (3,3,3) Electrical Measurements. (a) Theory and use of D.C. and A.C. instruments; analysis of sensitivity, accuracy, precision, and error. (b) A study of ammeters, voltmeters, and wattmeters. Energy measurements, watt-hour and demand meters. (c) Theory and application of impulse testing; oscillography; standards and tests. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c. C

337-9 (3,3,3) Manufacturing Processes. (See Industrial Technology 337.) C

338-12 (4,4,4) Electrical Instrumentation. (a) A discussion of the basic operating principles of control instruments and their applications to industrial processes. (b) The application of commercially available instruments to research problems. Dynamic and static calibration of instruments. (c) Control elements and techniques for devices and processes, dynamics of open and closed cycle control systems. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c, 318a,b. C

340-4 Mechanisms. The movement of bodies in space, basic mechanisms including analytical and graphical analysis. Linkages, cams, gears and their manufacture. Vibration, critical speeds, and gyroscopic applications. Laboratory. Prerequisite: Engineering 260a,b,c. C

342-9 (3,3,3) Engineering Technology Design. An elective project on any engineering subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c, Engineering 300a,b, 311a,b,c. C

347-9 (3,3,3) Foundation Engineering. (a) Subsurface investigation, theory of consolidation and settlement, strength theory and conditions of failure due to stresses imposed by engineering structures on foundation materials. (b) Study of the principal problems involved in the analysis, design, and construction of foundations for buildings, highways and other engineering structures. (c) Science of soil stabilization, utilization of stabilization agents, stabilization of foundation materials. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 314a,b,c. C

349-9 (3,3,3) Agricultural Design. (a) Analysis of factors affecting farm buildings, functional planning and structural design of various farm buildings. (b) Analytical study of operating characteristics of selected farm equipment and machinery. (c) Analysis of distribution, lighting, motors, and controls as applied to agriculturally related operations. Laboratory. Must be taken in a,b,c sequence. Prerequisites. 304 a,b,c, Engineering 300a,b, 311a,b,c. C

361-4 Engineering Economics. (See Engineering 361.) C

363-12 (4,4,4) Surveying. (a) The use and care of surveying instruments. Fundamental principles of surveying, computations, land surveying, topographic surveying data processing. (b) Field astronomy, route surveying, introduction to photogrammetry, hydrographic surveying, and subsurface surveys. (c) Precise surveying, geodesy, altimetry analysis of errors and error propagation, conditioned and adjusted by method measurements of least squares and other methods. Laboratory. Must be taken in a,b,c sequence. Prerequisites: Technology 101a,b and GSD 114c. C

364-6 (3,3) Highway Engineering. (a) Applications of route surveying and photogrammetry to highway location and design. Highway administration, planning, economics and finance; geometric design; traffic engineering; drainage; sub-grade; base courses; design and construction of flexible and rigid pavement. (b) Advanced highway surveying; applications of interpretation of aerial photographs; geometric highway design, traffic engineering, bituminous materials and airport design and engineering. Laboratory. Must be taken in a,b sequence. Prerequisite: 363a, 314a (concurrently). C

426-9 (3,3,3) Photogrammetry. (a) Principles and practice of terrestrial and aerial photogrammetric mapping, including planning flights, control surveys, uncontrolled mosaics, radial-line control, simple stereoplotting instruments, parallel distortions, graphical tilt determination, trimetrogon charting and economics. (b) An advanced study of photogrammetric principles including controlled mosaics, rectification, graphical, mechanical, and analytical space orientation. Readings and reports from current technical literature. The principles of many photogrammetric plotters are studied together with economic relation of these instruments to density of field control, office methods, and personnel. (c) A study of the soil and rock areas of the United States and the patterns present in aerial photographs. Fundamental elements of soil patterns are analyzed to permit determination of materials present and their properties. Emphasis is placed on photo interpretation for engineering and regional planning purposes. Laboratory. Prerequisite: 363A. C

437-9 (3,3,3) Industrial Electronics and Communications. Theory of active networks; radio communication, radar, television. Prerequisite: 304a,b,c. C

ENGLISH

105-3 to 6 English as a Foreign Language. Open to foreign students only. Maximum of 3 hours to be earned per quarter; graduate students receive no credit. C

300-4 Principles of English Grammar. Required for English students. Others should take 391. Credit not allowed for both courses.

GSC 301-3 Introduction to Semantics. C

302-12 (4,4,4) Survey of English Literature. (a) to 1550, (b) 1550-1750, (c) after 1750. May be taken in any sequence.

309-8 (4,4) Survey of American Literature. (a) to 1860, (b) since 1860. May be taken in either sequence.

GSC 313-3 Folklore. C

GSC 317-3 Recent American Literature. C

GSC 318-3 Modern British Literature. (Summer, abroad.) C

320-4 Early Nineteenth-Century Poetry. E

GSC 321-3 Revolution and Romanticism. C

GSC 335-3 Studies in Short Fiction.

GSC 345-3 World Literature. C

GSC 365-3 Shakespeare. C

365-4 Shakespeare. E

390-3 Advanced Composition. Expository writing.

391-3 Usage in English. The essentials of grammar and the "common decencies." Prerequisite to student teaching, except in English concentrations, which require 300.

392-3 Professional Writing I. Introductory course for undergraduates. Prerequisite to 492, but credit for the course does not constitute automatic admission to 492. Prerequisite: consent of instructor.

400-4 Introduction to English Linguistics. An introduction to the methods of descriptive linguistics as applied to English: the phonemics, morphemics, and syntax of English. Recommended for those preparing to teach English.

403-4 The History of the English Language. A survey of the development of the language from Indo-European to modern English with special emphasis on Middle and Early Modern English changes.

404-8 (4,4) Middle English Literature. (a) Contemporaries and successors of Chaucer: late 14th and early 15th century English literature, from *Sir Gawayne and the Grene-Knight* to the Scottish Chaucerans, (b) Chaucer. May be taken singly.

405-8 (4,4) Descriptive Linguistics. (a) Phonetics and phonemics, an analysis of language structure from phone to phoneme; (b) morphology and syntax, an analysis of language structure from morph to sentence, with emphasis on immediate constituent analysis. May be taken singly. Prerequisite: consent of instructor.

412-12 (4,4,4) English Nondramatic Literature. (a) 16th century, (b) 17th century, (c) 18th century. May be taken singly.

420-8 (4,4) American Poetry. (a) Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets, (b) the more important poets since 1900. May be taken singly. Prerequisite: 309a or 309b.

421-16 (4,4,4,4) English Poetry. (a) Early Romantics: major emphasis on general background and on Blake, Coleridge, and Wordsworth; (b) later Romantics: emphasis on Byron, Shelley, and Keats, the minor figures; (c) Victorian poets: Tennyson, Browning, Arnold, and other poets of England, 1830-1900; (d) modern British poets. May be taken singly.

431-12 (4,4,4) Major American Writers. Significant writers of fiction and non-fictional prose from the Puritans to the 20th century. (a) 1620-1800, (b) 1800-1865, (c) 1865-1915. May be taken singly.

438-4 Intellectual Backgrounds of American Literature. The relationship of basic ideas in America to American literature. Prerequisite: 309a or 309b.

441-4 The 18th Century Essay. The informal essay and the literary periodicals—The Spectator, Tatler, Guardian, Rambler, Idler, and Goldsmith's *Citizen of the World* ("Chinese Letters").

443-4 Victorian Prose. The chief writers of nonfiction prose from the late romantics to 1900. Prerequisite: 302c.

447-4 American Humor and Satire. A consideration of the writers and forms of 19th and 20th century humor.

454-12 (4,4,4) English Fiction. (a) 18th century: Defoe through Jane Austen, (b) Victorian novel: 1830-1900, (c) 20th century. May be taken singly.

456-4 Modern Continental Fiction. Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse.

458-8 (4,4) American Fiction. (a) The novel in America from its beginnings to the early 20th century, (b) trends and techniques in the American novel and short story since 1914. May be taken singly.

460-16 (4,4,4,4) British Drama. (a) Elizabethan drama: from the beginning of the drama in late Middle Ages through its flowering in such Elizabethan playwrights as Greene, Peele, Kyd, Marlowe, Heywood, Dekker, but excluding Shakespeare; (b) Jacobean drama: the Jacobean and Caroline playwrights: Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley; (c) Restoration and 18th century drama: after 1660, representative types of plays from Dryden to Sheridan; (d) modern British drama. May be taken singly.

464-4 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal.

468-4 American Drama. The rise of the theater in America, with readings of plays, chiefly modern. Prerequisite: 309a or 309b.

471-8 (4,4) Shakespeare. (a) The plays before 1600, (b) the plays of 1600 and later. Readings on the life of Shakespeare, the theater, and the acting company. May be taken singly.

473-4 Milton.

485-4 Problems in the Teaching of English. Aims, methods, materials, tests, programs, and other aspects of English instruction in the high school.

486-2 to 8 Workshop in High School English. Intensive study in lectures, laboratory, conferences, to arrive at agreement on the teaching of English in high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field.

487-2 to 8 Workshop in Junior High School English. Intensive workshop study in lectures, laboratory, conferences on the teaching of English in junior high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field.

488-9 (3,3,3) Methods of Teaching English as a Foreign Language. (a) Classroom techniques, (b) laboratory methods, (c) preparation of materials. Restricted to English as a Foreign Language students and must be taken in a,b,c sequence.

492-8 (4,4) Professional Writing II. Must be taken in a,b sequence. Prerequisite: 392 or consent of instructor.

494-4 Literature in Society.

495-8 (4,4) Literary Criticism. (a) History of criticism: ideas and techniques from

C

- Aristotle to the end of the 19th century, (b) modern criticism: recent critics and critical attitudes, and practice in writing criticism.
- 497-12 (4,4,4) **Senior Honors Seminars.** (a,b) Topic will vary yearly, (c) honors readings. Enrollment restricted to undergraduates. Prerequisite: consent of department. C
- 499-2 to 6 **Readings in English.** For English students only. Departmental approval required. No more than four hours may be taken in any one quarter.
- 500-2 **Materials and Methods of Research in English.**
- 501-4 **Old English Grammar.**
- 502-4 **Beowulf.**
- 504-4 **Advanced English Syntax.**
- 505-4 **Contrastive Linguistic Structures.**
- 508-4 or 8 **Studies in Chaucer.**
- 509-4 or 8 **Studies in Middle English Literature.**
- 511-4 or 8 **Studies in the Renaissance.**
- 513-4 or 8 **Studies in 17th Century Literature.**
- 514-4 or 8 **Studies in Restoration and 18th Century Literature.**
- 519-4 or 8 **Studies in Contemporary British Literature.**
- 520-4 or 8 **Studies in Romantic Writers.**
- 521-4 or 8 **Studies in Victorian Poetry.**
- 524-4 or 8 **Studies in the Metaphysical Poets.**
- 531-4 or 8 **Studies in American Colonial Period.** E
- 532-4 or 8 **Studies in American Transcendentalism.**
- 534-4 or 8 **Studies in Early 19th Century American Writers.**
- 536-4 or 8 **Studies in Later 19th Century American Writers.**
- 537-4 or 8 **Studies in 20th Century American Writers.**
- 538-4 or 8 **Problems in American Literature.**
- 540-4 **Studies in Linguistics. (Historical and Dialectal.)** E
- 543-4 or 8 **Studies in Victorian Nonfiction Prose.**
- 555-4 or 8 **Studies in the Victorian Novel.**
- 560-4 or 8 **Studies in Renaissance Drama.**
- 566-4 or 8 **Studies in Shakespeare.**
- 569-4 **Seminar in Special Problems of English as a Foreign Language.**
- 579-16 (4 or 8, 4 or 8) **Studies in Modern Literature.**
- 580-4 **Traditional Themes.**
- 581-12 (4,4,4) **Problems in High School English.**
- 585-2 to 8 **Teaching College Composition.** C
- 586-4 to 8 **Teaching College Literature.** C
- 594-8 (4,4) **Studies in Literary Form and Symbolic Action.** C
- 597-2 to 4 **Readings in Linguistics.**
- 598-1 to 9 **Independent Review of English and American Literature.**
- 599-2 to 9 **Thesis.**
- 600-1 to 48 **Dissertation.** C

FOOD AND NUTRITION

- 103-4 **Nutrition.** Principles of normal nutrition, including the essentials for selecting and planning the family dietary with some emphasis on the needs for varying ages, economic and social conditions. This course meets the requirements for nursing. Not open to students with concentration in home economics. Prerequisite: Chemistry 101b,c. C
- 105-4, 206-4 **Foods.** Production, marketing, food preservation, preparation and service of foods common to family meals. C
- 247-6 (2,2,2) **The School Lunch Program.** Lecture, discussion, and demonstration of quantity food production, menu-making, institutional equipment, record-keeping, administration, and sanitation as they apply to the school lunchroom. Emphasis on the needs and problems of the school lunch personnel. May be taken in any sequence. C

- 312-4 Nutrition and Food Selection.** Fundamentals and principles of normal nutrition with emphasis on food selection to meet the nutritional needs of adults and children. Not for those specializing in Food and Nutrition. C
- 316-3 to 4 Food Preservation.** Newer methods in the canning, preserving, and freezing of foods for home use. Prerequisites: 105, 206, or consent of instructor. C
- 320-4 Nutrition.** Principles of normal nutrition and metabolism, food values, and requirements for maintenance and growth. Prerequisites: 105, 206; Chemistry 101b,c. C
- 321-3 Food Demonstration.** A course offering opportunity to discuss, observe, and practice demonstrations. Emphasis on food standards and demonstration techniques. Field trip. Prerequisites: 105, 206. C
- 335-4, 336-4 Meal Planning and Table Service.** The planning, preparing and serving of formal and informal meals. Selection and care of table appointments. 336 does not include laboratory work and is offered on demand. Students may not take both courses. Prerequisites: 105, 206, or consent of instructor. C
- 340-4 Diet Therapy.** Modifications of the normal diet for therapeutic purposes. Prerequisite: 320. Offered alternate years. C
- 350-3 Institutional Equipment and Layouts.** Materials, construction, operation, cost, use of equipment, and analysis of floor layouts for efficient work routing in various types of institutions doing group feeding. Field trips. Prerequisite: 352a. Offered alternate years. C
- 351-3 Organization and Management.** Planning, direction, supervision, control of time, labor, and money in the operation of feeding large groups. Field trips. Prerequisite: 350. Offered alternate years. C
- 352-11 (4,4,3) Quantity Food Production.** Use of standardized formulas, power equipment, and techniques for preparation and service of food to large groups, and calculation of food costs for uniform control. Emphasis in the second course is on tearoom management and in the third on school lunchroom management. Prerequisites: 105, 206, or equivalent. Offered alternate years. C
- 355-3 Food Purchasing for Institutions.** Producing areas, distribution, varieties, cost, specifications, buying practices, storage, and storeroom control for institution food supplies. Field trips. Offered alternate years. C
- 356-4 Experimental Foods.** Advanced food preparation from the experimental standpoint, showing how ingredients, proportions, and techniques affect the quality of the product. Prerequisites: 105, 206, Chemistry 101b,c. Offered alternate years. C
- 359-4 Advanced Nutrition.** Reports and discussion of normal nutrition and metabolism. Prerequisite: 320. Offered alternate years. C
- 371-6 Field Experience.** Opportunity for supervised learning experiences in the student's area of concentration. C
- 376-4 Workshop in Health and Nutrition.** (Same as Health Education 376.) Investigation of food, nutrition, sanitation, and other health problems of community quantity feeding programs. C
- 404-4 Personal and Community Nutrition.** The role of food and nutrition in personal and community health and in emergency feeding programs. Field trips. Prerequisite: 320 or equivalent. C
- 481-2 to 6 Readings.** Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department. C
- 490-4 Nutrition and Physical Growth.** Lectures, readings, and discussions on nutrition in relation to human growth—pregnancy through adolescence—and its practical applications. Prerequisite: 320 or consent of instructor. C
- 500-4 Research Methods.** C
- 515-1 to 6 Seminar.** C
- 556-4 Advanced Experimental Food.** C
- 571-4 Recent Research.** C
- 572-2 to 8 Special Problems.** C
- 580-4 Recent Developments in Nutrition.** C
- 581-4 Recent Trends in Foods.** C
- 599-5 to 9 Thesis.** C

FOREIGN LANGUAGES

The student who has completed one year of foreign language in high school will usually begin with the first quarter of the first year course which is in General Studies. The student who has completed two years of high-school foreign language will usually begin with the intermediate course.

Students taking work in any first year college foreign language series should note that the first two terms will not be counted as electives toward graduation unless the third term is also completed.

GENERAL FOREIGN LANGUAGE COURSES

399-3 to 9 Readings. Readings in selected works of representative writers. Offered in French, Spanish, and German. May be taken for one, two, or three quarters. Primarily for students with no foreign language concentration, but may be taken for credit in foreign language concentration with consent. Prerequisite: 201. E

435-4 to 8 Workshop in Elementary School Foreign Language Instruction. Designed to assist elementary school teachers in integrating foreign languages into their teaching program as well as to encourage high school teachers to introduce or supervise foreign languages at the elementary school level. To count as education or foreign languages. Prerequisite: basic language credit.

486-8 (4,4) Materials and Methods for Teaching Foreign Languages. Application of language learning principles to classroom procedures at different levels. Theory and practice of the audio-lingual approach, the language lab, applied linguistics. Required for all majors intending to teach foreign languages. Prerequisite: one quarter of any 300-level course, or consent. E

CHINESE

120-3 (1,1,1) Chinese Conversation. Conversation and oral drill taken with GSD 120 by students who wish additional oral training: elected only by students enrolled in GSD 120. C

201-15 (5,5,5) Intermediate Chinese. Designed to give the students a review of the Chinese language and its expansion, a reading ability of modern prose, and practice in conversation and composition. Must be taken in a,b,c sequence. Prerequisite: one year of college Chinese (GSD 120c) or equivalent. C

FRENCH

123-3 (1,1,1) French Conversation. Conversation and oral drill taken with GSD 123 by students who wish additional oral training: elected only by students enrolled in GSD 123. Parts may be taken singly.

161-0 French for Graduate Students. Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of French. C

201-9 (3,3,3) Intermediate French. Composition, oral practice, rapid reading of modern authors with special attention to the role of French culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 123 or two years of high school French, or equivalent.

220-6 (2,2,2) Intermediate French Conversation. Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.

301-12 (4,4,4) French Literature from the 18th Century to the Contemporary Period. (a) Montesquieu, Voltaire, Diderot, Rousseau, and others, with reference to the social, political, and philosophic environment of the 18th Century. (b) Nineteenth Century Romanticism, Realism, and Naturalism. (c) Representative works of the 20th Century with special emphasis on the novel and drama. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E

- GSC 305-3 Contemporary French Drama.** C
- 310-9 (3,3,3) Survey of French Literature.** French literature from the beginning to the present time. Should be taken in a,b,c sequence. Prerequisite: 201c. C
- 311-9 (3,3,3) French Culture and Civilization.** Analysis of significant aspects of French culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. Prerequisite: 201 and one quarter of 220. Parts may be taken separately. E
- 320-6 (2,2,2) Advanced Conversation.** Conversation based on French history. Should be taken in a,b,c sequence concurrently with 311a,b,c. C
- 338-12 (4,4,4) French Literature from the Middle Ages Through the 17th Century.** (a) French literature from *La Chanson De Roland* to Francois Villon with special reference to the social, political, and cultural development of the Middle Ages. (b) Representative works of the Renaissance: Rabelais, Montaigne, Marot, Ronsard, and others. (c) Corneille, Racine, Moliere, Pascal and other writers of the 17th Century with reference to the political and social environment of the period. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E
- 350-8 (4,4) Advanced Composition and Conversation.** Oral and written practice for advanced students; intensive study of idiomatic expressions and current usage. Should be taken in a,b sequence. C
- 351-6 (3,3) Advanced French Conversation and Composition.** (a) Oral work of a practical nature for advanced students. Prerequisite: 201 and one quarter of 220, or consent. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence. E
- 352-5 French Conversation and Phonetics.** A thorough study of the phonetic alphabet and the formation of French sounds. C
- 400-4 French Literature Between 1870 and 1914.** A survey of French literature from 1870 to 1914. Prerequisite: 313. C
- 401-6 (3,3) 17th Century French Drama.** (a) 17th Century French Drama. (b) 17th Century French Drama. C
- 403-3 French Literature of the 18th Century.** French literature of the 18th Century. Drama and Novel. C
- 405-3 French Contemporary Novel.** A study of the novel from 1900 to the present with detailed attention to Proust and Gide. C
- 406-3 French Poetry from 1850 to 1900.** The Parnassian and Symbolist Movements in French poetry. C
- 407-3 French Poetry Since 1900.** A study of French poetry from 1900 to the present. C
- 451-6 (2,2,2) Seminar.** Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization. Required of all seniors with French concentration. E
- 461-4 French Stylistics.** Study of writing style in French and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of French grammar and composition. Prerequisite: 9 hours of 300-level courses. E
- 500-2 Seminar in Contemporary French Literature.**
- 501-2 to 6 Seminar on a Selected French Author.**
- 502-3 French Literature from La Chanson de Roland to Rabelais.** C
- 503-3 Rabelais and Montaigne.** C
- 504-3 La Pleiade.** C
- 507-3 A Study of Romanticism in France.** C
- 510-4 French Literature from 1850 to 1900.** C
- 511-3 20th Century French Drama.** C
- 515-3 Old French.** C
- 520-4 Graduate Composition and Diction.** C
- 543-2 to 6 Research Problems.** C
- 544-6 French Language and Culture.** E
- 545-3 Applied Linguistics and Remedial Phonetics.** E
- 546-3 Professional Preparation.** E
- 599-2 to 9 Thesis.** C

GERMAN

126-3 (1,1,1) German Conversation. Conversation and oral drill taken with GSD 126 by students who wish additional oral training: elected only by students enrolled in GSD 126. May be taken singly.

161-0 German for Graduate Students. Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of German.

201-9 (3,3,3) Intermediate German. Composition, oral practice, rapid reading of modern authors with special attention to the role of German culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 126 or two years of high school German, or equivalent.

220-6 (2,2,2) Intermediate German Conversation. Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.

251-4 Scientific German. Study of vocabulary and sentence construction as commonly found in German scientific writings. Prerequisite: one year of college German or equivalent. E

301-8 (4,4) Survey of German Literature to 1800. Historical development of German literature. Should be taken in a,b sequence. C

303-4 German "Novelle" in the Nineteenth Century. A study of representative works from 1800 to 1900, with emphasis on the literary movements of that time. C

304-5 Advanced Composition and Conversation. Required for prospective teachers of German. C

310-8 (4,4) Introduction to German Classical Literature. Lessing, Goethe, Schiller. Reading and discussion of representative works. C

311-9 (3,3,3) German Culture and Civilization. Analysis of significant aspects of German culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. Each quarter may be taken separately. Prerequisite: 201 and one quarter of 220. E

312-4 German Drama in the Nineteenth Century. Kleist, Grillparzer, Hebbel. Reading and discussion of representative works. C

313-12 (4,4,4) German Literature Before Romanticism. (a) The Old High German and Middle High German periods. (b) From the Ackermann in Böhmen to Johann Christian Günther. (c) German Literature from 1700 to the death of Schiller. Parts may be taken separately. Prerequisite: 201, 220-2. E

315-4 From Rationalism to Realism. Study of German literary works representing 18th Century Rationalism, "Sturm und Drang," and Romanticism which leads over to the literature of Realism; lectures and reports. C

316-12 (4,4,4) German Literature from Romanticism to Modern Times. (a) Introduction to the background, personalities and works of the period from 1798 to Heine. (b) The leading 19th Century Realists from Droste-Hülshoff to Fontane including the novel and drama of the period. (c) German literary masterpieces from Naturalism to the present. Parts may be taken separately. Prerequisite: 201, 220-2. E

351-6 (3,3) Advanced German Conversation and Composition. (a) Oral work of a practical nature for advanced students. Prerequisites: 201 and one quarter of 220, or consent. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence. E

401-4 (2,2) Goethe's Faust. (a) The Faust legend and early Faust books and plays; the genesis of Goethe's *Faust*: reading of Part I. (b) reading of Part II; study of symbolism such as blending of paganism with Christianity, ancient Greek culture with Germanic culture. Must be taken in a,b sequences. C

401-4 Faust. Analysis of both parts of Goethe's masterpiece, its background, meaning, and impact on world literature together with a general survey of the life and times of the author. Prerequisite: 201 and one quarter of 220. E

403-3 German Ballads and Lyrics. A selective study of the foremost examples of German balladry and lyric poetry, ranging from the poetry of Klopstock and Bürger to that of Hesse, Benn, etc. Lectures, recitations. C

- 404-4 Weimar and Its Aftermath.** German writings from the inception of the Weimar Republic to the end of World War II, with special reference to the correlation existing between literary expression and social, economic and political conditions. C
- 406-3 The German Comedy.** Comic and satirical works in German Literature, with special emphasis on the "Lustspiel" since 1800; lectures, reports. C
- 407-2 Great German Plays of the 20th Century.** Study and selective readings of outstanding stage successes; lectures, reports. C
- 408-4 German Civilization.** Intensive study of the German speaking areas of the world, with emphasis on the anthropological and sociological aspects of their respective cultures (Austrian, German, Swiss, "Reichs-deutsch," etc.); lectures, reports. C
- 411-6 (3,3) Middle High German.** (a) Grammar, and selective readings in both MHG originals and NHG translations of such epics as the Nibelungenlied and Gudrun. (b) The courtly epic poetry of such authors as Wolfram von Eschenbach, Gottfried von Strassburg, Hartmann von Aue, the lyric poetry of Walther von der Vogelweide, and didactic prose. C
- 413-6 (3,3) German Linguistics.** (a) Introduction to Comparative German Linguistics tracing relationships among German languages on the basis of phonology, morphology, and syntax; (b) History of the German language; a survey of the development of German through the Old-, Middle-, and High German periods; lectures, readings, reports. C
- 451-6 (2,2,2) Seminar.** Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization. E
- 497-1 to 2 Readings in 18th Century German Literature.** Departmental approval required. C
- 498-1 to 2 Readings in 19th Century German Literature.** Departmental approval required. C
- 499-1 to 2 Readings in 20th Century German Literature.** Departmental approval required. C
- 500-2 Seminar in Contemporary Literature.** C
- 501-2 Seminar on a Selected German Author.** C
- 506-2 Romanticism I.** C
- 507-2 Romanticism II.** C
- 509-4 (2,2) Old High German.** C
- 512-3 19th Century German Novel.** C
- 513-3 20th Century German Novel.** C
- 514-3 Seminar in Folklore.** C
- 543-2 to 6 Research Problems.** C
- 544-9 NDEA German Institute.** C
- 591-2 to 6 Seminar on Kant.** C
- 599-2 to 9 Thesis.** C

GREEK

- 201-12 (4,4,4) Intermediate Greek.** Grammar review and composition. Readings from Plato. Must be taken in a,b,c sequence. Prerequisite: GSD 130c. C
- 301-4 Introduction to Greek History.** Reading and discussion of selections from the histories of Herodotus and Thucydides. C
- 302-4 Plato.** Reading and discussion of the *Republic*. C
- 303-4 Aristotle.** Reading and discussion of the *Ethics*. C
- 311-8 (4,4) Introduction to Homer.** Reading and interpretation of selections from the *Iliad* and the *Odyssey*. Should be taken in a,b sequence. C
- 313-4 Introduction to Greek Tragedy.** Reading of at least two plays from the works of Aeschylus, Sophocles, and Euripides. C
- GSC 320-3 Greek Literature in Translation.** C
- GSC 330-3 Classical Mythology.** C

ITALIAN

- 144-3 (1,1,1) Italian Conversation.** Taken with GSD 144 by students who wish additional oral training; elected only by students enrolled in the corresponding beginning sections. Each quarter may be taken separately. E
- 201-9 (3,3,3) Intermediate Italian.** Development of listening, speaking, reading and writing skills on the intermediate level, with special attention to the role of Italian culture in world civilization. Prerequisite: GSD 144, or two years of high school Italian, or equivalent. E
- 220-6 (2,2,2) Intermediate Italian Conversation.** Development of oral skill on an intermediate level. Prerequisite: Italian 201c or concurrent registration in any quarter of 201. E

LATIN

- 201-12 (4,4,4) Intermediate Latin.** Composition and reading from various authors. Should be taken in a,b,c sequence. Prerequisite: GSD 133 or two years of high-school Latin. C
- 301-4 Cicero's Letters.** Prerequisite: 201c or equivalent. C
- 302-4 Vergil's Eclogues and Georgics.** Prerequisite: 201c or equivalent. C
- 303-4 Tacitus.** Prerequisite: 201c or equivalent. C
- 304-2 Private Life of the Romans.** C
- 311-4 Phormio of Terence.** Prerequisite: 201c or equivalent. C
- 312-4 Horace's Odes and Epodes.** Prerequisite: 201c or equivalent. C
- 313-4 Letters of Pliny.** Prerequisite: 201c or equivalent. C
- 326-4 Ovid's Metamorphoses.** C
- GSC 331-3 Latin Literature in Translation.** C
- 335-4 Vergil's Aeneid.** C
- 342-4 Advanced Composition.** A careful study based on classic prose-writers. C

PORTUGUESE

- 135-9 (3,3,3) Elementary Portuguese.** Open to students who have had no previous work in Portuguese. Must be taken in a,b,c sequence. C

RUSSIAN

- 136-3 (1,1,1) Russian Conversation.** Conversation and oral drill taken with GSD 136 by students who wish additional oral training; elected only by students enrolled in GSD 136. Parts may be taken singly. C
- 161-0 Russian for Graduate Students.** C
- 201-9 (3,3,3) Intermediate Russian.** Composition, oral practice, rapid reading of modern authors with special attention to the role of Russian culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 136 or two years of high school Russian, or equivalent. C
- 220-6 (2,2,2) Intermediate Russian Conversation.** Development of oral skill on the intermediate level. Offered for three quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201. C
- 308-9 (3,3,3) Survey of Russian Literature.** Historical survey of major movements, authors, and works in Russian to the present time. Should be taken in a,b,c sequence. Prerequisite: 201c. C
- 320-2 Readings in Russian Literature.** Selected readings in areas not covered in regular course work. C
- 330-6 (2,2,2) Advanced Composition and Conversation.** Based on the history of Russian and the cultural heritage of the Russian people. Should be taken in a,b,c sequence concurrently with 308a,b,c. C

- 401-8 (4,4) **The Russian Novel in the Nineteenth Century.** Should be taken in a,b sequence. C
- 411-8 (4,4) **Introduction to Russian Classical Literature.** Gogol, Pushkin, Turgenev, Tolstoy. Should be taken in a,b sequence. C
- 413-4 **Russian Drama in the Nineteenth Century.** Griboyedov, Gogol, Pushkin, and minor dramatists. C
- 414-3 **Russian Poetry from Zhukovsky to 1920.** A study of Russian Poetry from Sentimentalism through Symbolism. C
- 425-3 **Soviet Literature Since 1917.** A study of satirists and writers of everyday life. Constructivism and followers; Soviet literary criticism. Lectures, readings, and reports. C
- 452-4 **Advanced Composition and Conversation.** Oral and written composition of a practical nature for advanced students; emphasis on study of idiomatic expressions and current usage. C
- 500-2 **Seminar in Contemporary Russian Literature.** C
- 501-2 **Seminar on a Selected Russian Author.** C
- 503-2 **Seminar on 19th Century Russian Literature.** C
- 509-3 **Russian Literature of the 17th Century.** C
- 510-3 **Russian Literature of the 18th Century.** C
- 514-6 (2,2,2) **History of the Russian Language.** C
- 520-4 **Russian Linguistic Structure.** C
- 543-2 to 6 **Research Problems.** C
- 599-2 to 9 **Thesis.** C

SPANISH

- 140-3 (1,1,1) **Spanish Conversation.** Conversation and oral drill taken with GSD 140 by students who wish additional oral training; elected only by students enrolled in GSD 140. Parts may be taken singly.
- 161-0 **Spanish for Graduate Students.** Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of Spanish. C
- 201-9 (3,3,3) **Intermediate Spanish.** Composition, oral practice, rapid reading of modern authors with special attention to the role of Spanish culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 140 or two years of high school Spanish, or equivalent.
- 220-6 (2,2,2) **Intermediate Spanish Conversation.** Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.
- 301-12 (4,4,4) **Spanish Literature from the Medieval Period Through Romanticism.** (a) Spanish Literature from the 12th to the 15th Century: the epic, *El Cantar Del Cid*, ballads, lyric poetry, chronicles and other prose works. (b) Representative works of the 16th and 17th Century: Cervantes, Tirso de Molina, Lope de Vega, and others. (c) Romanticism in Spanish Literature during the 18th and 19th Centuries: Espronceda, Duque de Rivas, Jose Zorilla, and others. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E
- 304-8 (4,4) **Modern Spanish Literature.** (a) Spanish Literature of the 19th Century as influenced by trends of European thought of the period: Galdos, Bazan, Benavente, and others. (b) Spanish Literature of the 20th Century with emphasis on the novel, essay, and poetry: Unamuno, Ortega y Gasset, Garcia Lorca, and others. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E
- 306-4 **Latin American Literature.** Representative writers in Latin-American Literature from the Colonial to the Contemporary period with emphasis on the novel, essay, and poetry. Prerequisite: 201 and one quarter of 220. E
- 310-9 (3,3,3) **Survey of Spanish Literature.** The literature of Spain to the present. Should be taken in a,b,c sequence. Offered alternately with 333. Prerequisite: 201c. C
- 311-9 (3,3,3) **Spanish Culture and Civilization.** Analysis of significant aspects of Spanish culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. Each quarter may be taken separately. Prerequisite: 201 and one quarter of 220. E

316-3 Civilización Española. A study of the cultural patterns and heritage of the Spanish people from earliest times to the present. Prerequisite: 315 or consent of instructor. C

320-6 (2,2,2) Advanced Composition and Conversation. Required of students with a concentration in Spanish and students preparing to teach. May be taken concurrently with 311 or 333. C

333-9 (3,3,3) Survey of Spanish American Literature. Spanish literature in America from the conquest to modern times. Offered alternately with 311. Prerequisite: 201c. C

350-3 Advanced Composition. Daily themes based on Spanish models, with free composition once a week. Class discussions. C

351-6 (3,3) Advanced Spanish Conversation and Composition. (a) Oral work of a practical nature for advanced students. Prerequisite: 201 and one quarter of 220, or consent. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence. E

360-2 to 8 Travel-Study Course in Mexico. Lectures and course work at Mexican universities, in conjunction with the Latin American Institute's Study Abroad Program. Native professors and lecturers in Mexico City and other points visited. Individual projects and reports. Prerequisite: advanced standing in Spanish. C

451-6 (2,2,2) Spanish Seminar. Integration of the specialized major courses and development of a comprehensive view of the major field in terms of its relationships to the growth of Western Civilization. E

461-4 Spanish Stylistics. Study of writing style in Spanish and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of Spanish grammar and composition. Prerequisite: 9 hours of 300-level courses. E

(Iberian)

401-3 Spanish Novel of the 19th Century. Study of representative novels of Fernán Caballero, Valera, Pereda, Galdós, etc. C

402-3 Spanish Drama of the 18th and 19th Centuries. Reading of representative plays of the chief dramatists from Moratín to the Generation of 1898. C

403-3 Spanish Poetry. General survey of Spanish poetry from its beginnings to 1900. C

404-3 Spanish Literature of the 20th Century: Novel and Essay. Main trends of the Spanish novel and essay since 1900. C

415-3 Spanish Phonetics. Analysis of the sounds of Spanish and their manner of production; intonation; levels of speech; oral practice. C

440-6 (3,3) The Golden Age: Drama. Plays of Lope de Vega, Calderón, Tirso de Molina, Ruiz de Alarcón, and others. C

445-4 Cervantes. Don Quijote; other works assigned as collateral readings. C

501-2 Seminar on a Selected Spanish Author. C

505-3 The Picaresque Novel. C

506-3 The Renaissance. C

515-3 Old Spanish. C

520-3 Seminar in Syntax. C

525-3 The Spanish Ballads. C

543-2 to 6 Research Problems. C

599-2 to 9 Thesis. C

(American)

421-3 Survey of Modernism in Spanish American Poetry. Study of its origins, characteristics and achievements. C

422-3 Contemporary Spanish American Poetry. Spanish American poetry since modernism. C

423-3 to 4 The Mexican Novel of the 20th Century. Emphasis on fiction dealing with the Revolution and related social problems. C

424-3 to 4 Gaucho Literature. Study of the Gaucho as a social class and of the types of literature developed to portray and symbolize his way of life, attitudes and values. C

- 426-3 **The Mexican Short Story** Survey of the Mexican short story from pre-Conquest to the present. C
- 427-3 **Spanish American Drama.** Study of representative works of Florencio Sánchez, Rodolfo Usigli, Armando Moock, Samuel Eichelbaum, Xavier Villarrutia, and others. C
- 478-4 **Seminar in Latin American Thought.** (See Philosophy 478.) C
- 500-2 **Seminar in Latin American Literature.** C
- 535-3 **Mexican Essayists of the 19th Century.** C
- 538-3 **Seminar on Spanish American Poetry.** C
- 541-3 **Seminar on Spanish American Literary Criticism.** C
- 543-2 to 6 **Research Problems.** C
- 599-2 to 9 **Thesis.** C

ROMANCE PHILOLOGY¹

- 410-4 **Romance Philology I.** Survey of phonology, morphology, and syntax changes in Romance languages in general; special attention to the developments in French and Spanish for students with concentration in these fields. C
- 514-4 **Romance Philology II.** C
- 516-4 **Arthurian Romance.** C

FORESTRY

- 104-3 **Introduction to Forestry.** Acquaints students with the broad field of multiple-use forestry. Special emphasis is given to forestry as a profession. Field trips. For forestry majors or with instructor's consent. Only offered to freshmen or sophomore students. C
- 221-2 to 4 **Dendrology.** Taxonomy and silvics of angiospermous and gymnospermous trees and shrubs. Field trips. Prerequisite: GSA 201c. C
- 230-2 **Lumber Grading.** The study and practice of applying National Hardwood, Southern Pine, and West Coast Rules in grading lumber. Tally methods and grading for special products are also covered. C
- 306-3 **Silvical Field Studies.** The forest as a result of site and biotic factors. Influences of the forest on the site. Prerequisite: GSA 340. C
- 320-4 **Wood Technology.** Structure, identification, and physical properties of wood. Prerequisite: GSA 201c. C
- 330-2 **Harvesting Forest Products.** Principles of harvesting and transporting forest products. Field trips. C
- 333-4 **Forest Products Industries.** Principles of management and manufacturing methods in forest products industries. Utilization studies of Illinois logging and lumber companies. C
- 340-2 **Forest Fire Control.** The causes and effects of forest fires; physics of fire behavior, use of fire as a silvicultural tool. C
- 350-3 **Forest Recreation Management.** Recreational use of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and developments. Field trips. C
- 360-4 **Farm Forestry.** The management of farm woodlands; measurement of logs, trees, and stands; planting and harvesting methods; improvement cuttings; uses and marketing of woodland products. Field trips. Forestry majors not admitted. For. 104, 360, and 361 mutually exclusive. C
- 361-4 **Forest Conservation.** The importance and use of forests, their management and conservation, public forest policy. Forestry and other agricultural majors not admitted. For. 104, 360, and 361 mutually exclusive. C
- 363-11 (5,3,3) **Forest Mensuration.** (a) Principles and methods of measuring volume of trees, stands of timber, and rough wood products. Preparation of yield tables and growth studies. Field trips. Prerequisite: GSD 109 or 115. (b) Timber cruising, log

¹ Courses count toward concentration in French or Spanish.

scaling, and growth studies on S.I.U. Experimental Forest and cooperating forest owners. Spring field camp and trips. Prerequisite: 363a. (c) Background and practical problems in biometrical procedures for obtaining estimates of forest populations. Prerequisite: 363a. C

365-10 (4,3,3) Silviculture. (a) The theory and practice of applying ecological knowledge to economic management of establishment, composition, and growth of forest stands. Field trips. Prerequisites: Bot. 320, Pl. I. 301 (concurrent), GSA 340. (b) Student participation in planting, weeding, thinning, pruning, and improvement cuttings. Prerequisite: 365a. (c) Applied systems of silviculture to commercially important timber species and types in the U.S. Prerequisite: 365a. C

369-3 Forest Photogrammetry. Use of stereoptic plotting instruments and aerial photos to map and type forest stands. C

375-4 Forest Management. Economic and technical principles involved in managing forests. Prerequisite for 365a,b. C

381-1 to 2 Agricultural Seminar. (Same as Animal Industries 381, Agricultural Industries 381, and Plant Industries 381.) Discussion of problems in agriculture and forestry. Limited to senior students. C

390-1 to 6 Special Problems in Forestry. Assignments involving research and individual problems in forestry. Prerequisite: advanced standing and written consent of instructor and 3.75 grade point average or petition to Department. C

410-3 Forest Management for Wildlife. Interrelations between forest practices and game. Forest protection from mammals and birds. Emphasis is on the treatment of the forest. Prerequisite: Zoology 463 and concentration in forestry or consent of instructor. C

440-4 Ecology of Grasses and Grasslands. (Same as Botany 440.) Structure, analysis, and dynamics of grassland communities; structure and growth of individual species. Field and laboratory work. Prerequisite: GSA 340 or consent of instructor. C

450-4 Forest and Park Administration. Fundamentals of management and administration of recreation Forests. Development of Forest and suburban parks under a Forest environment. Review of current local, state, and Federal legislation applicable to Forest recreation. C

464-4 Advanced Silviculture. Analysis and measurement of site quality; stand density; growth as related to site factors and competition; factors affecting reproduction; the tree as a variable. Prerequisite: For. 365A and B. C

465-2 Forest Field Studies. An extended trip to study forest conditions and management practices in different forest regions of the United States. Cost shared by students. Prerequisites: For. 330, 363A, 365A. C

466-3 Forest Watershed Management. Effects of treatment of forested watersheds on quality and quantity of water yield. Consideration of alternatives in water use and flood control. Prerequisites: Pl. I. 301, GSA 330, or consent of instructor. C

470-8 (4,4) Economics of Forestry. (a) Production. Introduction to forestry economics; micro-economics of forestry production and conservation. Prerequisite: GSB 211a. (b) Marketing. Marketing in the forestry economy; introduction to aggregate planning in forestry including consumption and production goals. Prerequisite: 470A or consent of instructor. C

471-4 Land Resource Planning. (Same as Agricultural Industries 471 and Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; elementary land resources planning techniques. Prerequisites: 470A or Agricultural Industries 350 or Economics 440. C

476-3 Cases in Forest Management. A series of case studies analyzing governmental, industrial, and private forest management objectives and plans implemented by executive decisions. Prerequisite: For. 375. C

520A-1 to 6 Readings in Forestry. C

520B-1 to 6 Readings in Resource Economics. C

570-3 Principles of Research. C

575-1 to 6 Research. C

581-1 to 6 Seminar. C

599-2 to 9 Thesis. C

GEOGRAPHY**300-4 World Cultural Geography.****C****302-4 Introduction to Physical Geography.** A study of the earth's physical surface, world distribution patterns of the physical elements, their relationship to each other and their importance to man. Field trip and laboratory work.**304-4 Introduction to Economic Geography.** Study of the spatial distribution and interaction of economic activities. Introduction to locational theory. Prerequisite: GSB 101a.**306-4 Introduction to Cultural Geography.** An overview of the geographic viewpoint in the study of the human occupancy of the earth. Aspects of population, settlement, and political geography are treated, and a generalized survey of major world cultural areas is used to integrate course elements. Prerequisite: GSB 101a.**308-3 Introduction to Geographic Methods.** Designed to introduce the geographic methods of integrating physical, economic and cultural elements in the study of areas. Cartographic and quantitative techniques utilized.**310-7 (4,3) (C); 310-6 (3,3) (E) Introduction to Cartographic Methods.** Properties of maps and air photos, their uses and sources; Map symbols, map projections and map construction. Introduction to the use of quantitative techniques as applied in geographic study. Laboratory. Prerequisite: GSB 101a.**GSA 312-3 Conservation of Natural Resources.****E****324-4 Restoration and Conservation of Natural Resources.** Survey of major resources of United States with stress on problems of conservation and restoration. Emphasis on water, mineral, forest, grass, soil, wildlife, scenic, and recreational resources. Field trips. Prerequisite: GSB 101a or consent of instructor.**GSA 330-3 Weather.****GSA 331-3 Climate.****343-4 Teaching of Geography.** Presentation and evaluation of methods of teaching geography. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Prerequisite: GSB 101a at Carbondale; none at Edwardsville.**GSB 351a-3 Geographic and Cultural Background of Developing Africa.****E****387-2 to 4 Honors in Geography.** Supervised research and investigation in different branches of geography. Open to students in the honors program.**C****402-10 (4,3,3) Advanced Physical Geography I.** Deals with one or more of the following: land forms, climate, soil, and water; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 302 or consent.**403-7 (4,3) Advanced Physical Geography II.** Content drawn from same broad range of topics as 402. To be alternated with 402 to enable student to specialize further in physical geography. Prerequisite: 302 or consent.**404-10 (4,3,3) Advanced Economic Geography I.** Deals with one or more of the following: transportation, manufacturing, agriculture, resources, trade and urban geography; depending on, and varying with, interests of instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 302 or consent.**405-7 (4,3) Advanced Economic Geography II.** Content drawn from same broad range of topics as 404. To be alternated with 404 to enable student to specialize further in economic geography. Prerequisite: 302 or consent.**406-10 (4,3,3) Advanced Cultural Geography I.** Deals with one or more of the following: population, settlement, ethnic characteristics, political factors; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques

of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 306.

407-7 (4,3) Advanced Cultural Geography II. Content drawn from same broad range of topics as 406. To be alternated with 406 to enable student to specialize further in cultural geography. Prerequisite: 302 or consent.

410-8 (4,4) (C); 410-6 (3,3) (E) Advanced Geographic Techniques. Geographic applications of cartographic and quantitative research techniques. Prerequisite: 310 or consent of instructor.

416-8 (4,4) Cartography (C); 416-6 (3,3) Advanced Cartography (E). Instruction and practice in the techniques of map-making and problems in map reproduction. Laboratory. Prerequisite: 310.

424-4 Regional Problems in Conservation. The distribution, use, and interrelationship of the resources of the U.S. and the conservation techniques applied to them.

440-2 to 6 Reading for Majors. Supervised readings in selected subjects. Prerequisite: advanced standing. C

450-3 to 15 Travel Study Course. Enrichment through travel, supervised study, and readings on areas visited. E

461-7 (4,3) Advanced Regional Geography: Anglo-America. Deals geographically with present-day United States and Canada. (a) A general survey of the area, open to students without a concentration. (b) Investigates specific topics in depth, for students with a concentration in geography.

462-7 (4,3) Advanced Regional Geography: Europe. See 461.

463-7 (4,3) Advanced Regional Geography: Mediterranean Lands and Southwestern Asia. See 461.

464-7 (4,3) Advanced Regional Geography: Soviet World. See 461.

465-7 (4,3) Advanced Regional Geography: Africa. See 461.

466-7 (4,3) Advanced Regional Geography: Asia. See 461.

467-7 (4,3) Advanced Regional Geography: Latin America. See 461.

468-7 (4,3) Advanced Regional Geography: Oceania. See 461.

470-12 (4,4,4) Urban Planning. (Same as Government 470.) The basic problems of planning in the urban community. Includes the administrative and physical principles involved in the planning of urban land use. Emphasis is upon research technics, design principles, and governmental instrumentalities in the planning process. Prerequisite: consent of instructor. C

470-18 to 22 (4,4,4,4 to 8) Urban Planning. (Same as Government 470.) (a) Planning concepts and methods, (b) planning administration and the planning function in public process, (c) field problems, (d) urban planning seminar: Planning in a Free Society, (C), (e) planning and public administration internship. Parts c and d may be taken concurrently. E

471-8 (4,4) Regional Planning. Examination of the viewpoint, methods, and techniques of regional planning. Prerequisite: consent of instructor. C

471-7 (4,3) Regional Planning. Area and regional development, theory, and practices. E

475-4 to 8 Methods of Field Geography. Application of geographic field techniques. E

480-4 Workshop in the Teaching of Geography. Gives the geographic approach to man in space. Skills, techniques in the use of maps, globes, pictures, statistics and graphics, and reading the landscape and literature will be acquired. C

490-4 (1,1,1,1) Tutorial in Geography (C); 490-6 (2,2,2) Tutorial in Geography (E). Individual and small group conferences with staff members to examine geographic concepts.

500-4 Geographic Techniques I.

501-4 Geographic Techniques II.

511-4 Philosophy of Geography.

514-2 Teaching of College Geography. C

515-4 to 6 Field Course. C

520-2 to 8 Seminar in Physical Geography. C

521-2 to 8 Seminar in Economic Geography.

- 522-2 to 12 Seminar in Regional Geography.
 523-4 Seminar in Cartography.
 524-2 to 8 Seminar in Cultural Geography.
 527-2 to 8 Seminar in Urban and Regional Planning. C
 530-2 to 10 Independent Studies in Geography.
 540a-2 to 12 Research in Physical Geography. C
 540b-2 to 12 Research in Economic Geography. C
 540c-2 to 12 Research in Regional Geography. C
 540d-2 to 12 Research in Cultural Geography. C
 599-2 to 9 Thesis.

FRESHMAN CONVOCATION

- 000-0 Freshman Convocation. C

FRESHMAN HONORS SEMINAR

- 111-0 Seminar for Superior Freshmen. C

GEOLOGY

- 200-1 Optional Laboratory for GSA 200. C
 220-5 Physical Geology. A study of the principal minerals and rocks of the earth's crust, emphasizing origin and identification; the physical processes active in producing the surface features of the earth. Laboratory and field trips required. C
 221-5 Historical Geology. Presenting in chronological order the procession of physical and biotic changes through which the earth has passed. Includes the physical history and evolution of life forms as evidenced by fossil records. Laboratory. Prerequisite: 220 or consent of instructor, elementary course in zoology or botany recommended. C
 302-4 Structural Geology. A study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition, interpretation, and illustration of the resultant geologic structures. Laboratory. Prerequisite: 220, 221. C
 310-4 Crystallography. The study of morphological crystallography including crystal symmetry, Hermann-Mauguin symbolism for the crystal classes, space groups, and solution of problems by means of the stereographic projection. Prerequisite: Trigonometry. C
 311-4, 312-4 Determinative Mineralogy. A study of nonsilicate and silicate minerals including the influence of crystal chemistry upon their structures, and physical and chemical properties. Laboratory practice in chemical determination and sight identification. Prerequisites: 310, Chemistry 111b (concurrently). C
 315-4 Petrology. A study of the characteristics and classification of rocks, their origin and geologic distribution. Laboratory. Prerequisite: 220. C
 320-4 Economic Geology. Study of the world's larger mining districts and the economics and political importance of their geological resources. C
 GSA 321-3 Introduction to Paleontology. C
 405-3 Geologic Interpretation of Maps and Air Photos. Interpretation and use of air photos in geologic mapping, interpretation and construction of geologic maps, such as areal, structure, isopach, paleogeologic. Laboratory. Prerequisite: 221, 302, 431. C
 410-4 Stratigraphy and Sedimentation. The characteristic features of sedimentary rocks and their processes of origin; the classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory. Prerequisite: 220, 221. C
 414-5 Paleobotany. (See Botany 414.) C
 415-4 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Laboratory. Prerequisites: 310, Physics 208. C
 416-4 X-Ray Crystallography. Introduction to the study, measurement, and identification of unknown crystalline materials by X-ray diffraction techniques (especially

- the Debye-Scherrer methods). Upon request, non-geology majors may work with unknowns from their own fields of study. Prerequisites: 310, Mathematics 150. C
- 420-9 (3,3,3) Geology of Petroleum.** The geological occurrence of petroleum, including origin, migration, and accumulation; a survey of exploration methods and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum. Laboratory. Prerequisites: 221, 302. C
- 425-13 (5,4,4) Paleontology.** (a) a survey of the important invertebrate phyla and their fossil representatives; (b) the mollusca, arthropoda, brachiopoda, and echinodermata; (c) the protozoa, porifera, coelenterata, bryozoa, and other minor groups. Includes classification, evolution, paleoecology, and geographic and stratigraphic distribution. Laboratory. Prerequisites: 221, Biology 201. C
- 430-4 Physiographic Provinces of North America.** Designed to give the student an intelligent appreciation of the evolution of land forms in the physiographic provinces of North America and to explain the surface features in a landscape. Prerequisite: 220. C
- 431-4 Geomorphology.** A study of land forms, relating topographic features to the underlying rocks and structure and to processes of erosion, deposition, and earth movements. Prerequisite: 220. C
- 440-1 to 4 Independent Study.** Prerequisites: 220, 221, advanced standing. C
- 450-9 Field Geology.** A field mapping course including problems in stratigraphy, structure, paleontology, physiography, and economic geology. Requires a written geologic report. Consult the department for dates, cost, and equipment. Students will live at the Little Grass Lake campus. Prerequisite: 302. C
- 450B-3 Advanced Field Geology.** C
- 510-9 (3,3,3) Stratigraphy.** C
- 515-12 (4,4,4) Mineral Deposits.** C
- 520-12 (4,4,4) Advanced Petrology.** C
- 528-3 Introduction to Micropaleontology.** C
- 540-1 to 9 Advanced Studies.** C
- 541-1 to 9 Research.** C
- 599-2 to 9 Thesis.** C

GOVERNMENT

- 210-4 American Government.** A general survey of national, state, and local governments. Includes the national and state constitutional principles as required by Illinois law. E
- 231-5 American National Government.** A survey covering the structure, functions, and principles of national government. Also meets social science and American government requirements. C
- 232-5 State and Local Government.** A survey of the structure and functions of American state and local government. C
- 232-4 State and Local Government.** A survey of the structure and functions of American state and local governments. Prerequisite: 210 or equivalent. E
- 300-4 American Government.** An advanced course to satisfy the American government requirements of the College of Education. Deals with the structure and functions of national, state, and local government. Not open to those who have had 231 or GSB 211b. C
- GSB 303-3 International Relations.** C
- 305-5 Development of the American Constitution.** The evolution of the United States constitutional system. Recommended for pre-law students. Prerequisite: 231. C
- 315-3 Administration of Justice.** The organization and work of the American judicial system. Recommended for prelaw students. Prerequisite: 210; or 232.
- 321-1 to 6 Readings in Government.** Prerequisite: consent of instructor.
- 330-2 Illinois Government.** The development and functioning of government in Illinois. Prerequisite: 210; or 232.
- 340-3 The Legislative Process.** A study of the principles, organization, and work of American legislative bodies. Prerequisite: 210, or 231.

GSB 345-3 Introduction to American Foreign Policy.

GSB 359-6 (3,3) Society and State: Social and Political Theories.

E

360-5 Public Administration. Principles and problems of administration on the national, state, and local level. Prerequisite: 231.

C

360-4 Introduction to Public Administration. Nature of public administration in the United States, basic administrative practices, the peculiar governmental systems; major issues in public administration. Prerequisite: 210.

E

361-3 Problems in Public Administration and Policy Formulation. Intensive examination of problem areas illustrating administrative and management practices in public service and demonstrating linkages between politics and administration in our political system. Prerequisite: 360.

363-3 United States-Latin American Relations. A study of the governmental relations between the United States and the various nations of Latin America. Prerequisite: 231.

C

370-4 International Relations. A study of world politics—the causes of international conflict and the conditions of peace. Prerequisite: GSB 345.

E

371-3 Problems of American Foreign Policy. An analysis of selected problems in the field of American foreign policy. Prerequisite: 231 or 243.

C

371-4 Problems of American Foreign Policy. An analysis of selected problems in the field of American foreign policy. Prerequisite: 210 or GSB 345.

E

379-3 Political Parties II. A study of the historical development of American political parties. Prerequisite: 210, 231 or 232.

380-3 Political Parties. The development and work of American political parties. Prerequisite: 231 or 232.

C

380-4 Political Parties. An analysis of contemporary American political parties. Prerequisite: 210 or equivalent.

E

GSB 385-3 Contemporary Political "Isms."

390-8 (4,4) Comparative European Government. (a) The Constitutional and Liberal Systems: A comparative study of Great Britain, France (liberal and constitutional phases) and the nontotalitarian phases of German government. Other states may be included at the option of the instructor. (b) The Authoritarian and Totalitarian Systems: An examination of the authoritarian systems of Fascist Italy, Nazi Germany and the U.S.S.R. Also included is a comprehensive comparison of these two types of government.

E

GSB 390-3 Introduction to Comparative Government.

C

391-3 Comparative Governments—Dictatorship.

C

GSB 392-3 Introduction to Latin American Government and Politics.

C

398-3 Government and Law. Techniques of law (classification, rights, and duties). Legal personality, public law and private law, criminal law, juristic acts. Property, possession and procedure. Prerequisite: 231.

C

406-4 The American Chief Executive: President and Governor. A study of the origin and background of the presidency and the governorship, qualifications, nomination and election, succession and removal, the organization of the executive branch, and the powers and functions of the president and governor. Prerequisites: 231, 232 (C); 210 or equivalent (E).

410-3 Labor and Politics. A political history of the American labor movement from its early 19th century origins to the present. Attention given to the political philosophy and practice of labor unions. Prerequisite: 231.

C

415-6 (3,3) Political Behavior. An analysis of the nature of public opinion and methods of influencing political behavior. Major attention given to studying the basic psychological attitudes and behavior. Prerequisite: 231 (C); 210 or equivalent (E).

420-3 Pressure Groups and Politics. An analysis of interest groups and their techniques of political propaganda. Prerequisite: 231 (C); 210 or equivalent (E).

430-3 Government and National Security. A study of the organization of government for national security; the historical and current developments in civil-military relations; the legal status of over-seas military aid programs; international defense programs; and the problem of disarmament. Prerequisite: 231 or consent of instructor.

C

432-3 Government and Natural Resources. A study of the administrative and policy

problems in the development of multiple purpose conservation programs by the national government. Prerequisite: 231 or consent of instructor. C

434-3 Government and Agriculture. An historical and contemporary survey of the role of agriculture in politics, the major and minor farm parties and pressure groups, the elements of the current "farm problem," and the influence of agriculture in public agencies and the formation of public policy. Prerequisite: 231. C

435-4 Government and Business. An historical study, with contemporary emphasis upon relations between government and economic institutions. Prerequisite: 231 or consent of instructor (C); 210 or equivalent (E).

436-3 Government and Labor. (See Economics 436.) C

438-4 Social Welfare Legislation. The Social Security Act and other legislation of major significance for the welfare and maintenance of the family, the handicapped, children, and other special groups. Their relationship to the legal structure of federal, state, county, township, and municipal welfare facilities and institutions with indications of economic and social consequences. Prerequisite: consent of instructor. C

440-4 Public Personnel Administration. An analysis of some of the central problems encountered by the government executive in recruiting, maintaining, and developing personnel, such as political neutrality, leadership and motivation, career development, security regulations, and the role of personnel in policy planning and execution. Prerequisite: 210 or equivalent (Edwardsville), 360 (Carbondale).

441-4 Philosophy of Politics. (See Philosophy 441.) C

451-3 International Politics of Europe. Nation-wide system in Europe; foreign politics of major states; nationalism as a source of conflict, Soviet expansionism; progress toward European security and unification. E

452-4 Governments and Politics of Sub-Sahara Africa. A study of the governments and politics of the former and present British and French territories: Ghana, Nigeria, Kenya, Guinea, Congo, Senegal, etc. Prerequisite: GSB 390 or consent of instructor. C

453-12 (4,4,4) Soviet Russia and the Communist States of Eastern Europe. C

453-12 (4,4,4) The Government and Politics of the Soviet Union. An intensive study and research exercise in communist government and politics. Prerequisite: 390b or consent of instructor. E

454-8 Development of German Democracy. Offered co-operatively by Southern Illinois University and the University of Hamburg. Involves a summer's residence in Hamburg, Germany, and study under professors of the two co-operating universities. Prerequisite: consent of the American professor. C

455-4 Major Governments of Western and Central Europe. A comparative study of the political systems of the major countries of Western and central Europe. Prerequisite: GSB or Government 390 or consent of instructor.

456-4 Great Britain and the British Empire. A survey of the governmental institutions and practices within the British Commonwealth, with particular attention to the political systems of Australia, Canada, and South Africa. (The governments of India and Pakistan are treated in 458.) Prerequisite: GSB 390 or consent of instructor (C); 390a or consent of instructor (E).

457-8 (4,4) Government and Politics in the Near and Middle East. Iran, Iraq, Syria, Lebanon, Egypt, Jordan, Saudi Arabia, etc. Prerequisite: GSB 390 or consent of instructor (C); 370 or consent of instructor (E).

458-12 (4,4,4) (C); 458-8 (4,4) (E) Government and Politics of Asia. (a) Burma, Thailand, Malaya, Indochina, Indonesia, Philippines. (b) China, Japan, Korea, Formosa. (c) India, Pakistan, Ceylon. Prerequisite: GSB 390 or consent of instructor (C); 390 b or consent of instructor (E).

461-4 Organizational Theory and Public Administration. Analysis of various theoretical approaches to public administration with emphasis on recent American literature in this field. Prerequisite: 360 or consent of instructor (C); 360 or concurrent registration with 360 (E).

462-3 Intergovernmental Relations. C

463-3 Government, Social, and Economic Policy. Explanation of contemporary agencies of policy determination within the national government; attention to methods and devices utilized to effectuate national social and economic policy within the federal

system; appraisal of historical developments, trends, and results as they affect American governmental, constitutional, and political philosophy, public administration, and the general welfare. Prerequisite: GSB 211c or consent of instructor. C

464-3 Regulatory Administration. A study of the work of the major regulatory commissions of the national government. Prerequisite: 360 or consent of instructor. C

465-3 Local Government and Public Administration. Problems and issues at local governmental level. Emphasizes administrative approaches, special problems in inter-governmental relationships, and the developing tasks related to urban expansion. Prerequisite: 360. E

466-3 State Government and Administration. Leading problems of government and administration of American states. Prerequisite: 232. C

467-4 Municipal Government and Administration. Development and functioning of city government in the U.S. Prerequisite: 232. C

468-3 County Government in the United States. An examination of the traditional rural county and township, the growing number of metropolitan counties, and the associated growth of special districts in the U.S. Prerequisite: 232. C

469-3 Administration of State and Local Finance. An examination of the administrative problems connected with local and state revenues and expenditures in the U.S. Prerequisite: 232. C

470 Urban Planning. (See Geography 470.)

471-4 The Organization and Administration of American Foreign Policy. An advanced course dealing with the organizational and administrative aspects of American foreign policy. Prerequisite: 243 or 371. C

472-4 International Organization. Development and organization of international governmental and administrative systems, with emphasis on the United Nations. Prerequisite: GSB 303. C

472-4 International Government. E

473-3 Metropolitan Studies and Research. Examination of the reorganization movement related to improvement and restructuring of government in metropolitan areas. Review and evaluation of special problems in research methodology. Prerequisite: 360 or 465 or consent of instructor. E

475-8 (4,4) International Law. Rules and practices governing the nations in their relations in peace and war. Prerequisite: GSB 303. C

478-4 International Politics. A study of the interplay of political forces in the international community. Particular emphasis will be placed on war-time diplomacy, peace treaties, the alignments and conflicts of power in the post-war period. Prerequisite: GSB 303 or consent of instructor. C

480-4 The Pacific and the Far East. Political and strategic problems in this area. Prerequisite: GSB 303 or History 370. C

484-8 (4,4) History of Political Parties. C

484-12 (4,4,4) History of Western Political Theories. (Same as Philosophy 484.) (a) Outstanding political theories of the ancient and medieval periods, including theories of Aristotle, Plato, Cicero, St. Augustine, and Thomas Aquinas. (b) Important political theories from the Renaissance to the end of the 18th century, including the theories of Machiavelli, Hobbes, Rousseau, Locke, and Burke. (c) The theories of Publius, Bentham, Hegel, Tocqueville, Mills, Marx, and Nietzsche. Prerequisite: 6 hours of government. E

487-6 (3,3) American Political Ideas. An historical study of the political ideas of leading American statesmen and publicists, and their resulting influence upon our governmental system. Prerequisite: 305 or GSB 385.

488-12 (4,4,4) Recent Political Theory. (a) The outstanding Anglo-American liberal political theorists from John Stuart Mill to the present. (b) The outstanding "scientific" political theorists from Karl Marx to the present. (c) The outstanding idealistic and nationalistic political theorists from Hegel to the present. Prerequisite: GSB 385 or 390. C

495-8 (4,4) American Constitutional Law. (a) Constitutional law of the United States with emphasis upon cases dealing with the framework of our federal system. (b) American liberties. Prerequisite: 231. C

- 495-12 (4,4,4) Constitutional Law.** (a) A study of the development of American constitutional law chiefly through judicial opinion. Emphasis is placed on the analysis of federalism and the distribution of powers. Prerequisite: 210 or equivalent. (b) A study of government power and the rights of property. Special attention is directed to tension between the public welfare and private rights, the extent of government power to regulate property rights, and state versus federal power over commerce and taxation. Prerequisite: 210 or equivalent. (c) A study of the nature and extent of civil rights and liberties in the United States. Special attention is given to freedom of speech, press, and association, separation of church and state, equal protection of the laws, and the rights of persons accused of crime. Prerequisite: 210 or equivalent. E
- 497-4 Administrative Law.** Law as it affects public officials in carrying out the rights, duties, and necessary functions of the public office. Prerequisite: 360. C
- 498-4 Jurisprudence.** (Theories of Law.) Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights. Prerequisite: 231. C
- 499-4 Scope and Method of Government.** Practical training in research and writing techniques in the field of government. Bibliographical materials, footnotes, use of law library facilities, and government documents. Required of all beginning graduate students. C
- 501-525 Seminars.** C
- 501-2 to 9 Seminar in Contemporary Legislation.** C
- 502-2 to 9 Seminar in Governmental Problems.** C
- 503-2 to 9 Seminar in Pressure Groups.** C
- 505-2 to 9 Seminar in Political Parties.** C
- 508-2 to 9 Seminar in International Relations.** C
- 509-2 to 9 Seminar in International Organization.** C
- 510-2 to 9 Seminar in State Government.** C
- 511-2 to 9 Seminar in Local Government.** C
- 512-2 to 9 Seminar in Public Administration.** C
- 513-2 to 9 Seminar in Constitutional Law.** C
- 515-2 to 9 Seminar in Comparative Constitutions.** C
- 516-2 to 9 Seminar in Municipal Administration.** C
- 517-2 to 9 Seminar in Problems in Political Theory.** C
- 520-2 to 9 Seminar in American Foreign Policy.** C
- 521-1 to 12 Readings.** C
- 525-2 to 9 Seminar in International Law.** C
- 526-2 to 9 Seminar in County Government.** C
- 530-4 to 12 Internship in Public Affairs.** C
- 595-2 to 12 Individual Research.** C
- 598-1 Teaching Government.** C
- 599-2 to 9 Thesis.** C
- 600-1 to 48 Dissertation.** C

GUIDANCE

- 305-4 Educational Psychology.** Study of the learner and the learning process. Includes study of behavior, discipline, development, the school environment, application of learning theories, and methods of assessment. Prerequisite: GSB 201c.
- 412-4 Mental Hygiene.** A survey of principles concerning factors and conditions in personal life that tend to facilitate or deter mental health. Mental health viewed as living creatively in an atmosphere of satisfactory inter-personal relations. Prerequisite: 305.
- 420-4 Educational Statistics.** The statistics needed by teachers for classroom use, the reading of educational literature, and informal educational research. Includes methods of organizing and presenting data, describing group performance, describing individual performance, model distributions, measure of relationship, measures of reliability, and tests of significance. Prerequisite: 305. E
- 422-12 (4,4,4) Educational Measurement and Statistics.** (a) Study of the philos-

ophy and techniques of measurement. Special attention to the construction and use of teacher-made tests. (b) The statistics needed by teachers for classroom use, the reading of educational literature, and informal educational research. (c) Study of standardized tests and other measuring devices to reveal individual and group characteristics. Emphasizes application and interpretation for counseling, education, and research purposes. Must be taken in a,b,c sequence. Prerequisite: 305. C

422-4 Educational Measurements I. Study of the philosophy and techniques of measurement. Special attention to the construction and use of teacher-made tests. Prerequisite: 305. E

426-4 Individual Inventory. Principles and procedures for studying individual pupils and their problems, for guidance purposes. Emphasis on interview, observation, ratings, case study, cumulative record, etc. Prerequisites: 422b, 442, 542.

442-4 Basic Principles of Guidance. Introductory course on student personnel services. Survey of philosophy, principles, and organization of guidance services. Prerequisite: 305. C

475-4 Implementation of Guidance Principles In the Public Schools. C

481-1 to 6 Seminar. Conducted by staff members and/or distinguished guest lecturers on pertinent topics. Prerequisite: 305. C

483-6 Community Programs for the Prevention of Juvenile Delinquency. Analysis of delinquency prevention in community programs administered by the public schools, social welfare, governmental agencies. A study of the various categories of juvenile delinquency is applied to a critique of existing programs and to the development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: consent of instructor. E

485-4 to 9 Workshop in Educational Utilization of Community Resources.

501-2 to 6 Special Research Problems.

502-4 Measurement and Evaluation of Products and Procedures. C

503-4 Tests and Measurements in Business Education. C

511-4 Educational Implications of Learning Theories.

515-4 Psychological Aspects of Education.

520-8 (4,4) Educational Statistics and Experimental Design.

522-4 Educational Measurements II. E

525-4 School Behavior Problems and Their Prevention.

526-4 Techniques in Individual Guidance.

528-4 Advanced Guidance of the Individual.

535-4 Introduction to Individual Measurement. E

536-8 (4,4) Individual Measurement and Appraisal. C

536-4 Appraisal of Intelligence. E

537-12 (4,4,4) Counseling Theory and Practice. C

537-4 Counseling Theory and Practice I. E

538-4 Counseling Theory and Practice II. E

541-4 Occupational Information and Guidance.

542-4 Basic Principles of Guidance. E

543-4 Guidance Through Groups.

545a-4 Seminar in Guidance. E

545f-4 Seminar in Guidance: Pupil Adjustment. E

545j-4 Seminar in Guidance: Organization and Administration. E

545-2 to 4 Seminar in Guidance.

562a-4 Child Development in Education. E

562b-4 Adolescent Development in Education. E

562-8 (4,4) Human Development in Education. C

565-4 Psychology of Elementary School Subjects.

566-4 Psychology of Secondary School Subjects.

573-2 Selection, Placement, and Follow-up. C

575a-1 to 12 Practicum in Counseling. C

575b-1 to 12 Practicum in Elementary Guidance. C

575c-1 to 12 Practicum in Secondary Guidance.

575d-1 to 12 Practicum in Rehabilitation Practices.	C
575e-1 to 12 Practicum in College Student Personnel Work.	C
576-4 Practicum in School Personnel Work.	E
581a-1 to 12 Internship in Counseling.	C
581b-1 to 12 Internship in Elementary Guidance.	C
581c-1 to 12 Internship in Secondary Guidance.	C
581d-1 to 12 Internship in Rehabilitation Guidance.	C
590-4 Seminar in Behavioral Foundations.	C
596-5 to 9 Independent Investigation.	C
599-2 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

HEALTH EDUCATION

203-3 Health Problems of the Handicapped.	C
205-4 Principles and Foundations of Health Education. Introduction to philosophy and history of health education as well as functions of the school health department and voluntary agency interaction in the health education program. Prerequisite for all 300 and above.	
300-3 Communicable Disease. A study of the communicable diseases with emphasis on control and principles of prevention, and application of these principles to the individual school and community.	
302S-4 Driver Education and Training. To prepare the college student for teaching driver education and training in the secondary school. Prerequisite: a valid driver's license.	
310-4 Home Nursing. Theory, practice, and demonstration concerning equipment, care of patient and sick room, maternity and child care, recognition of common symptoms of disease, administration of simple treatments.	C
311-4 Child Development. Physical development of the child beginning with the study of pregnancy, pre-natal and maternal care continuing with overview of development from birth through puberty.	C
312-4 Emotional Health. Concepts of positive emotional health as related to teacher and parent in terms of influences of the child in the classroom and community.	C
313S-4 Introduction to Safety Education. Prepares for safety education in the public schools. Concerns safety as a social problem, development of safety skills, accident causes, teacher liability, research in the field.	
320S-2 Safety in Physical Education and Athletics. For preparation to teach in elementary or secondary school athletic or physical education programs. Emphasis on sports safety methods.	C
323S-4 Methods and Materials in Safety Education. To acquaint student with material aids and methods, techniques in the teaching of safety education at elementary and secondary school levels.	C
325-3 Community Health Problems. Problems of a community health nature are treated and methods outlined to meet the problems. Areas include community health organization, problems of the environment, food, sanitation, and disease. Epidemiological process stressed.	C
330-4 Consumer Health. Legislation on state and federal levels affecting the health of the consumer; official agencies serving as watchdogs of consumer health; non-official agencies (AMA, CU, etc.) doing the same job; health and medical protection in the form of insurance, group practice, prepayment, etc.; health hazards of the space age; false and misleading information and advertising in health and medicine; cultists and faddist and their effect on the health of the consumer; media and publications and consumer health.	C
334S-4 First Aid. Red Cross First Aid Course with lectures, demonstrations, and practical applications. Red Cross Instructor's Certificate given.	
350-4 Methods and Materials in Elementary Health Education. Designed to show the prospective teacher fundamental processes, techniques, and material aids involved in elementary school health teaching.	
355-4 Introduction to Public Health. Philosophy, organization, administration, and	

functions of federal, state, and local, official and voluntary public health agencies. Periodic field trips involved.

356-5 **Public Health II.** An examination of specific public health problems and measures of control. Intended for health science students only. C

365-4 **Problems of Health Education in the Public Schools.** Study and observation of existing health education problems in the public schools; of recent developments in education and their influences upon the school health program. C

376-4 **Workshop in Health and Nutrition.** (Same as Food and Nutrition 376.) C

400-4 **Health Appraisal of School Children.**

405-3 **Methods and Materials in Social Hygiene.** C

413s-4 **Safe and Healthful Living Outdoors.** C

415s-3 to 4 **Workshop in Driver Education and Traffic Safety.**

443s-4 **Methods and Materials in Driver Education.**

450-4 **Health Education in the Elementary School.** C

460-4 **Methods and Materials in Secondary School Health Education.**

461-4 to 8 **Workshop in Health Education.**

462-4 **Health Education Workshop.** C

463-4 **Health Education Workshop.** C

464-4 **Workshop in Alcohol Education.** C

471-4 **Organization and Administration of School Health.**

475s-3 **Traffic Law Enforcement and Planning.** C

480s-4 **Workshop in Safety Education.**

481s-4 **Safety Education Workshop.** C

488-4 **Educational Aspects of Environmental Sanitation.** C

489-4 **Introduction to Vital Statistics.** C

490-2 to 8 **Field Work in School and Community Health.** C

500-4 **Community Organization for Health Education.** C

510-4 **Construction of the Curriculum in Health Education.** C

511-5 **Practicum in Health Education Workshop.** C

515-4 **Review Cur Lit in H Ed Pub Health and Safety Education.** C

520-4 to 6 **Special Projects.** C

525s-4 **Org Admin and Supervision of Safety Education.** C

526-4 **Evaluation in Health Education.** C

530s-4 **Problems and Research in Accident Prevention.** C

533-12 (4,4,4) **Human Conservation.**

536-4 **Professional Preparation in Health Education.** C

590-4 to 12 **Field Internship.** C

595-4 to 6 **Thesis.** C

597-1 **Seminar in Health Education.** C

598-1 **Seminar in Health Education.** C

599-1 **Seminar in Health Education.** C

600-1 to 48 **Dissertation.** C

HIGHER EDUCATION

402-2 **Careers in Higher Education.** An exploratory course designed to acquaint the student with the career possibilities and functions of higher education. C

441-4 **Functions and Organization of College Student Personnel.** A description and discussion of the functions of college student personnel programs with an emphasis on the organizational relationships of the various functions. C

510-4 **Higher Education in the United States.** An overview of higher education with emphasis on current problems and organizational relationships. C

511-4 **History and Philosophy of Higher Education.** C

512-4 **Higher Education in the Nations of the World.** C

513-4 **Policy Making and Control of Higher Education.** C

521 (2 per quarter) **Seminar in Higher Education.** C

522-1 to 12 **Readings in Higher Education.** C

523-1 to 12 **Internship in Higher Education.** C

524-2 to 6 Special Research Problems.	C
546-4 Personnel Work with College Student Groups.	C
551-4 Curriculum Design and Development in Higher Education.	C
565-4 The Junior College.	C
576-4 Administrative Practices in Higher Education.	C
577-2 Principles of College Staff Management. A study of systems and problems of personnel practices.	C
578-4 Finance of Higher Education.	C
599-1 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

HISTORY

100-3 Survey of Western Civilization. Ancient Period to 1000 A.D.	E
201-8 (4,4) History of the United States.	E
GSB 300-9 (3,3,3) History of the United States.	
304-9 (3,3,3) (C); 304a-3 (E) History of the Ancient World. (a) The Near East, (b) Greece, (c) Rome. May be taken individually or in any sequence.	
306-9 (3,3,3) History of Rome. (a) The Republic. (b) The Western Empire. (c) The Eastern Empire. Prerequisite: 100 or equivalent.	E
308-3 History of Illinois. The history of the state from 1818 to the present. Recommended for students with a concentration in history and those who expect to teach in elementary schools.	
309-4 (E) The Negro in America. The role of the Negro in America from the seventeenth century to the present with emphasis on the period since 1865.	
311-3 Medieval History. Europe from the fall of Rome to the establishment of national monarchies.	C
312-3 (C); 312-4 (E) Central Europe in the Nineteenth Century. An analysis of the rise of nationalism with emphasis on Germany and Italy and of the problems of the Austro-Hungarian Monarchy. Prerequisites: GSB 101b,c.	
322-12 (4,4,4) English History. (a) Britain to 1603, (b) 1603-1815, (c) since 1815. May be taken individually or in any sequence.	C
GSB 323-3 East and West in the 20th Century—Origins and Prospects.	C
330-3 (C); 330-4 (E) The Revolution and the Constitution. A study of the conflicting forces which produced the American Revolution, led to the creation of the federal union and shaped the early republic.	
332-6 (3,3) (C); 332-8 (4,4) (E) Medieval History. (a) Early Middle Ages. (b) Later Middle Ages. Prerequisite: sophomore standing.	
338-6 (3,3) History of Greece. (a) Hellenic history. (b) 401-133 B.C. Prerequisite: sophomore standing.	E
352-9 (3,3,3) History of Latin America. (a) Colonial Latin America, (b) Independent Latin America, (c) Latin America in World Affairs. May be taken individually or in any sequence.	
365-4 History of Chinese Civilization. A study of the march of Chinese civilization from prehistoric times to the present, stressing social structure, government institutions, and intellectual movements.	
367-6 (3,3) History of the Far East. (a) Introduction to 1800, (b) 1800-1945. May be taken singly or in either sequence.	
GSB 369-3 The Contemporary Far East.	
372-6 (3,3) (C); 372-8 (4,4) (E) History of Russia. (a) To 1905. (b) Since 1905. May be taken individually or in any sequence. Prerequisite: GSB 101b,c.	
GSB 380-6 (3,3) East Europe.	
401-6 (3,3) (C); 401-8 (4,4) (E). History of the South. (a) The Old South. (b) The New South. An intensive study of the social, economic, political and cultural developments of the South.	
405-3 The American Civil War. Emphasis upon the clash of national and sectional interests; economic, political, and military aspects of the conflict. Prerequisite: GSB 300b, or consent of instructor.	

- 410-2 to 5 **Special Readings in History.** Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand.
- 411-9 (3,3,3) **Social and Intellectual History of the United States.** (a) 1607-1830. (b) 1830-1900. (c) 1900 to present. The development of American society and a study of various types of economic, social, and political thought that have influenced it. C
- 412-9 (3,3,3) **Intellectual History of the U.S.** (a) 17th, 18th Centuries, (b) 19th Century, (c) 20th Century. Prerequisite: GSB 300-9. E
- 415-9 (3,3,3) (C); 415-12 (4,4,4) (E) **Early Modern Europe.** (a) Renaissance. (b) The Reformation. (c) Age of Absolutism and Enlightenment. Prerequisite: GSB 101b,c.
- 417-9 (3,3,3) (C); 417-16 (4,4,4,4) (E) **Advanced English History.** (a) The Empire-Commonwealth. (b) Constitutional History. (c) English Culture in the Age of American Colonization. (d) Tudor England.
- 420-4 **The French Revolution.** A sketch of the passing of feudalism in France, the background and development of the revolutionary movement, and the Napoleonic period.
- 425-4 **American Colonial History.** Founding of the American colonies and the development of their institutions to 1763.
- 428-4 **The Age of Jackson.** Origins, background, and development of that phase of American democracy associated with the Jacksonian era. The political, social, and economic history of the years 1815-44 will be considered in detail. Prerequisite: GSB 300a. E
- 430-9 (3,3,3) **Late Modern Europe.** (a) Age of Revolution, 1815-1880. (b) 1880-1918. (c) Since 1918. Age of Dictatorships.
- 435-9 (3,3,3) **Advanced American History.** (a) 1865-1900. (b) 1900-1929. (c) 1929 to present. Prerequisite: GSB 300-9.
- 440-6 (3,3) **History of American Diplomacy.** (a) To 1913, (b) 1913 to present. A study of the important treaty relations of the United States, and a general consideration of American foreign policies. Prerequisites: GSB 300a,b, or consent of instructor.
- 442-9 (3,3,3) **History of the West.** (a) Colonial. (b) Trans-Allegheny. (c) Trans-Mississippi. C
- 449-3 **Development of Afro-Asian Nationalism.** A study of the rise of national movements, the winning of independence, and the vast array of political and economic problems since independence. C
- 450-4 **Europe Since 1914.** Political and cultural developments in 20th century Europe with emphasis on international relations. Prerequisites: GSB 101b,c. E
- 451-3 **Historiography.** Development of history as a written subject, including works and philosophy of the various historians in ancient, medieval, and modern periods.
- 452-3 **Historical Research and Thesis Writing.** The rules of historical research studied and applied to a definite topic. (For concentrations in history only.)
- 454-3 **Biography in American History.** Outstanding leaders and their contributions to the history of the United States. Attention to historical writers who specialize in biography. Prerequisite: a course in U.S. history.
- 455-3 **History of Inner-Asian Relations.** Tribes, migrations, wars, and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier. C
- 460-9 (3,3,3) **Social and Intellectual History of the Middle Ages.** (a) 500-1000. (b) 1000-1250. (c) 1250-1500.
- 470-3 **Argentina, Brazil, and Chile.** A narrative and comparative study of the independent era of the history of the three leading states of South America.
- 471-6 (3,3) **History of Mexico.** (a) 19th century. (b) 20th century. Significant political, economic, diplomatic, social, and cultural aspects of Mexican life from independence to modern Mexican life.
- 473-6 (3,3) **The Caribbean Area in the Twentieth Century.**
- 474-3 **United States-Mexican Relations.**
- 481-3 **Rome: The Early Empire.** E
- 500-3 to 9 **History Seminar.**

510-2 to 5 Readings in History.	
511-3 Studies in the Middle Ages.	
512-3 Studies in Nineteenth Century Europe.	
514-3 Studies in Asian History.	
515-3 Current United States History and Problems.	
516-4 Studies in Contemporary Europe.	C
517-3 Constitutional History of the United States and Problems.	C
518-3 England in the Age of the "Glorious Revolution."	C
519-4 The Age of Jefferson.	
553-3 New Viewpoints in American History.	
598-3 (1,1,1) Teaching History in College.	C
599-1 to 9 Thesis.	C

HOME AND FAMILY

227-3 Family Living. A study of relationships and adjustments in family living, designed largely to help the individual.	C
237-3 Child Development. Principles of development and guidance of children as applied to home situations. Directed observation involving children of varying ages.	C
300-3 Home Economics for Men. Units dealing with food selection, serving, and table practice; economics of the home; grooming and clothing selection; family relations; consideration of personality evaluation. Field trip.	C
301-3 Home Arts and Social Usage. Emphasis on the home arts and social usage that will provide for more satisfying personal and family living. For women who are not concentrating in Home and Family.	C
302-4 Basics of Family Living.	C
324-2 Equipment. Selection, use, and care. Field trips.	C
331-3 Home Management, Lectures. A study of factors affecting the management of the home in meeting the needs of individuals and creating a satisfying environment for the family. Special consideration given to those problems involving the use of time, money, and energy.	C
332-4 Home Management Residence. Six weeks' residence in Home Management House, with actual experience in different phases of homemaking. Field trip. Prerequisites or required concomitants: 227, 331; Food and Nutrition 335.	C
341-4 Consumer Problems. Study of motives of consumption, family income and expenditures, selection of commodities and services, buying and selling practices, and evaluation of consumer aids. Consideration of contemporary consumer problems. Field trips.	C
345-3 to 4 Child Development Practicum. Observation and participation in direction of young children. Prerequisite: 237.	C
366-3 Family Development. Study of changing patterns in family living throughout the family life cycle. Prerequisites: GSB 201-9, 227; or GSB 341.	C
407-2 to 8 Workshop. Designed to aid workers in professions related to home and family. Emphasis for the workshop will be stated in the announcement of the course.	C
423-4 Advanced Family Housing. (Same as Clothing and Textiles 423.) Further appreciation and understanding of aesthetic, economic, psychic, and social factors influencing choice of family housing today. Prerequisite: Clothing and Textiles 323 or consent of instructor.	C
424-4 Selection, Use, and Care of Appliances. Materials used in equipment, methods of construction, principles of operation of appliances for cooking, refrigeration, laundering, cleaning; selection, operation, and care of appliances to obtain maximum satisfaction in use. Prerequisite: 324 or consent of instructor.	C
435-4 Work Simplification in Home Management. Basic scientific work simplification principles applied to work done in the home by full-time, employed or physically handicapped homemakers.	C
456-4 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory and field experiences. Prerequisite: 237 or Psychology 301 or equivalent.	C
466-2 Practicum in Parent-Child Study. Designed to increase student's ability to work	

with parents and parent groups through an awareness of factors in the parent-child relationship and knowledge of current research and methods in parent education. Integration with infant and child development laboratories and related field experience. Prerequisites: 227, 237 or equivalent. C

471-2 to 6 **Field Experience.** Opportunity for supervised learning experiences in selected areas. Prerequisite: Consent of departmental chairman. C

481-2 to 6 **Readings.** Supervised readings for qualified students. Prerequisite: consent of instructor and chairman. C

500-4 **Research Methods.** C

540-4 **Trends in Consumer Problems.** C

550-4 **Advanced Home Management.** C

556-4 **The Pre-School Child.** C

562-4 **Child Development Through Home and School.** C

566-4 **Interpersonal Relationships Within the Family.** C

571-4 **Recent Research.** C

572-2 to 8 **Special Problems.** C

599-5 to 9 **Thesis.** C

600-3 to 48 **Dissertation.** C

HOME ECONOMICS

The Home Economics Honors courses are listed below. In each course, the subject matter depends upon the needs and interests of the students.

305-2 to 6, 306-2 to 6 **Home Economics Honors Seminar.** C

387-2 to 8 **Special Problems—Honors.** C

388-2 to 8 **Research and Investigations—Honors.** C

HOME ECONOMICS EDUCATION

111-2 **Home Economics Orientation.** Surveying professional opportunities in home economics; planning for the development of personal and professional proficiencies. C

306-2 **Seminar and Readings in Home Economics Education.** A philosophical approach to the field of home economics. Social, psychological, anthropological, economic considerations as held by home economists and others in relation to the professions in the field of home economics and for homemaking in a democratic society. Offered alternate years. C

307-3 **Methods of Teaching for Dietetics Majors.** Designed as preparation for the teaching role of the dietitian. Selection and organization of materials. Practice in using a variety of techniques and teaching aids. Offered alternate years. C

309-5 **Methods and Philosophy of Teaching.** Study of techniques and devices in teaching vocational homemaking (for in-school and out-of-school groups). Methods in group work and individual counseling. Philosophy of homemaking education, development of teaching aids, units of work, and courses of study. Prerequisites: Guidance 305, consent of instructor. C

310-4 **Evaluation and Adult Education.** Using and developing instruments for evaluation with respect to goals of a family-community centered homemaking program and preparing students to carry on adult education. Prerequisites: 309 & Secondary Education 352B concurrently. C

313-2 to 4 **Special Problems.** For students recommended by their chairman and approved by the chairman of their department and the instructor in charge for independent, directed study. Prerequisite: 309. C

370-5 **History, Development, and Principles of Extension Work.** A study of the history, development, organization, and purposes of extension work. Discussion of problems in principles of conducting and administering extension work in home economics. Field trips. Offered alternate years. C

371-6 **Field Experience.** Six weeks of observing and assisting a county home adviser. Opportunity for supervised learning experiences in various phases of extension work. Prerequisite: 370. C

414-4 **Home Economics for Elementary Teachers.** Units of work in nutrition, school

- lunches, family and social relationships, textiles, and clothing. C
- 415-1 Introduction to Graduate Study.** Seminar to orient the student to graduate work through relation of courses to goals of program, standards of work, habits of thinking, communication of ideas, uses of professional materials and publications. Required. Students should take at first opportunity. C
- 481-2 to 6 Readings.** Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department. C
- 500-4 Research Methods.** C
- 505-4 Home Economics in Secondary Schools.** C
- 506-4 Evaluative Procedures in Home Economics.** C
- 507-2 to 8 Workshop.** C
- 510-4 Supervision of Home Economics.** C
- 510A-1 to 4 Practicum in Supervision.** C
- 515-4 Trends in Home Economics Education.** C
- 516-4 Advanced Methods of Teaching Home Economics.** C
- 517-4 Methods and Materials for Adult Programs in Home Economics.** C
- 571-4 Recent Research.** C
- 572-2 to 8 Special Problems.** C
- 573-1 to 6 Seminar: Research in Home Economics.** C
- 599-5 to 9 Thesis.** C
- 600-3 to 48 Dissertation.** C

HUMANITIES

- 301-3, 302-3, 303-3 Humanities Honors.** Prerequisite: completion of the second-level General Studies courses and invitation of the Humanities Honors Program Committee. E

INDUSTRIAL EDUCATION

- 100-2 Orientation in Industrial Education.** Introduction to the various phases of industrial education to enable the student to develop an understanding of the role of industrial education in industry and in education, and to help guide his thinking in relation to occupational goals. C
- 217-4 General Typography.** (Same as Printing and Photography 217.) After brief introductory work in screen and block typography, major portion of course is devoted to study of foundry type, type classifications, use of job cases, hand typesetting, layout, use of illustrations, and proof-pulling. Laboratory. C
- 302-4 Construction Methods for Primary Teachers.** Various media such as wood, metal, and paper. Acquainting the primary teacher with the materials, tools, and processes which students at the primary level can manipulate and use in the classroom. Laboratory. C
- 303-4 Diversified Crafts for Teachers and Recreational Leaders.** Experience in constructional activities involving the use of wood, metals, leathers, plastics, reed, raffia, clay, and other materials adaptable to the needs and interests of camp counselors and elementary school leaders. Laboratory. C
- 319-3 to 24 (3 per quarter) Industrial Internship.** Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences and examinations. Prerequisite: consent of coordinator. C
- 380-1 to 12 Special Skills in Teaching Technological Subjects.** Develops new and special industrial skills for teaching industrial and technological subjects. For advanced students and teachers to develop new but basic manipulative skills and understandings in selected areas. Prerequisite: 12 hours in industrial education. C
- 408-3 Teaching Aids in Technological Education.** Selection of development, analysis, cataloging, and use of commercial and self-made instructional aids and devices. C
- 419-8 to 16 Advanced Student Teaching in Technical Programs.** Experience in working with special and post-high school technical training programs in approved centers. The student teacher will follow the program of the supervisors of the primary

specialization in both regular and extra-class activities. Prerequisite: 9 quarter hours professional Industrial Education. C

435-6 to 18 Manual Arts Internship. Supervised hospital experience featuring various applications of manual arts therapeutical treatments. Prerequisite: consent of co-ordinator. C

450-1 to 12 (1 to 4 per quarter) Advanced Skills in Technical Subjects. Modern industrial practices and techniques in various selected technical fields. For experienced persons seeking an opportunity to develop advanced techniques and to increase understanding in specialized industrial fields. Emphasis on modern industrial processes, methods, materials, and techniques used in school shops, drafting rooms, and industrial organizations. Prerequisite: basic training in area selected for study. Limited to certified teachers. C

465-8 (4,4) Industrial Safety. (See Industrial Technology 465.) C

480-3 Problems of Junior High School Industrial Arts. Ways and means of correlating industrial arts with other curriculum areas, selecting content, and solving problems pertinent to industrial arts at the junior high school level. Prerequisite: 12 hours in technical subjects. C

485-3 Principles and Philosophy of Industrial, Vocational, and Technical Education. An understanding of the nature and purpose of practical arts, vocational and technical education, their relationships and differences, and the place of each in preparing people for the world of work. C

487-3 Layout and Planning of Technical Facilities. Principles and practices underlying the planning and designing of shops and laboratories in vocational, industrial, and technical education. Prerequisite: 12 hours in technical subjects. C

491-6 (3,3) Principles of Industrial Teaching. (a) Problems and special methods in teaching industrial arts. (b) Emphasis on methods of teaching trade subjects. May be taken in either sequence. Prerequisite: one-half of concentration must be completed. C

494-3 Organization and Administration of Industrial Education. Principles and policies governing the administration of industrial education programs in elementary, junior, senior high schools; relation of federal and state supervision of industrial education to local administration. Prerequisite: 12 hours in technical subjects. C

495-3 Occupational Analysis. Involves the fundamental steps for analyzing trades and other occupations with some thought toward establishing appropriate units of instruction for the apprentice or student. Jobs, operations, and essential related information are analyzed. Prerequisite: 12 hours in technical subjects. C

496-3 Selection and Organization of Subject Matter. Selection and arrangement of teaching content; preparation of assignment, operation, information, and job sheets; preparation of tests. Prerequisite: 12 hours in industrial education. C

497-3 Leaders and Literature in Technological Education. An understanding of the literature available, one's obligation for keeping abreast of new developments, and emphasis on reading and scanning for new ideas in student's specialized field. Prerequisite: 12 hours in industrial education. C

498-3 Planning Multiple Activity Programs. Philosophy, techniques, and administration of laboratories and shops featuring multiple offerings. Prerequisite: consent of instructor. C

502-6 Measurements and Evaluations of Products and Procedures. C

504-4 History of Industrial and Vocational Education. C

505-4 Administration and Supervision of Industrial Education. C

506-4 Co-operative Programs. C

540-2 to 6 Research in Technological Education. C

541-4 Occupational Information and Guidance. C

550-4 College Teaching of Industrial and Technical Subjects. C

560-2 to 12 (2 to 8 per quarter) New Developments in Technological Education. C

INDUSTRIAL TECHNOLOGY

212-9 (3,3,3) Wood Science and Technology. (a) Wood science; a study of the structure and properties of wood. (b) New wood products and their industrial uses.

(c) Modern industrial processes in wood technology including plant layout and production management. Laboratory. Must be taken in a,b,c sequence. No prerequisite. C
235-9 (3,3,3) Technical Drafting. (a) Basic fundamentals and principles of drafting. Emphasis on orientation, techniques, reading and understanding the language of industry. (b) Emphasis on drafting problems and an understanding of complete working drawings, pattern development, and reproduction techniques. (c) Machine drafting, including detail and assembly drawings of machines and machine parts. Laboratory. Must be taken in sequence. No prerequisite. C

300-12 (4,4,4) Plastic Materials and Processes. (a) An introduction to the general field of plastics. History, development, commercial materials, and processing will be explored. (b) Thermoplastics, including a study of the materials, equipment, design, tooling, and techniques of forming. (c) Thermo-setting plastics and specialized processing and converting, including advanced techniques and experimental development with all types of plastics. Laboratory. May be taken in any sequence. Prerequisite: GSA 101c or Chemistry 111a. C

304-9 (3,3,3) Architectural Drafting and Design. (a) Basic room planning, analysis of family needs, utilization of building sites, and developing preliminary plans. (b) Preparation of house plans, including elevations, details, plot plan, and service plans. (c) Advanced residential planning and designing; standards, codes, specifications, and research. Laboratory. Must be taken in a,b,c sequence. Prerequisite: one course in high school drafting or sketching. C

305-9 (3,3,3) Technical Illustration. (a) Basic pictorial illustration, sketching, angular perspective and parallel perspective. (b) Tone values and rendering various industrial materials in illustrations, technical and pictorial sketching. (c) Idea computation, detail, assembly, oblique, diagrammatic and axonometric sketching, manufacturing, maintenance, and assembly illustration. Integrated system schematics. Laboratory. Must be taken in sequence. Prerequisite: Technology 101a. C

306-9 (3,3,3) Industrial Design. (a) Basic design with industrial materials. (b) Advanced design problems with opportunity for concentration in one or two areas of industry. (c) Applied industrial design through cooperative arrangements with industry. Laboratory. Must be taken in sequence. Prerequisite: Technology 101a. C

309-12 (4,4,4) Graphic Arts. (a) An introduction to the basic fundamentals of graphic arts such as layout, type composition, presswork, bookbinding, silk screen and linoleum block techniques. (b) Continuation of fundamentals with special emphasis on typographic design, further experiences in letterpress, lithography, copy preparation, and plate making. Laboratory. Must be taken in sequence. Prerequisite: one course in drafting. C

312-9 (3,3,3) Wood Products and Processes. (a) Introduction to processing of wood materials and use of the basic industrial tools and machines. (b) Industrial jigs and fixtures of the wood industry and their use in production techniques. (c) Custom design and fabrication with wood materials and research on industrial technology in processing. Laboratory. Must be taken in sequence. Prerequisite: one course in drafting. C

314-9 (3,3,3) Foundry Processes. (a) Basic tools, materials and industrial processes used in constructing patterns and molds in the casting of common metals. (b) Advanced instruction in the use of special material in patternmaking; coring techniques, shell molding, and other special casting processes. (c) New developments in the foundry industry; sand testing standards and procedures; special foundry equipment. Laboratory. Prerequisite: Technology 101a, IT 312a. C

316-9 (3,3,3) Industrial Covering. (a) Basic materials and processes used in surface coverage and ecoration of forms, frames and bodies. (b) Fabric and plastic material and processes used on firm and cushioned surfaces. (c) Techniques and processes in flat surface coverings such as plastics, ceramics, metal, etc. Laboratory. May be taken in any sequence. No prerequisite. C

318-9 (3,3,3) Industrial Welding. (a) Fundamentals in the techniques, care and use of oxyacetylene and electric arc welding and flame-cutting equipment on the common metals. (b) Advanced instruction in the use of oxyacetylene, electric arc, inert gas, and special procedures used in fabricating ferrous and non-ferrous metals and alloys. (c) Technical instruction in the use of semi-automatic and automatic welding equip-

ment; metallurgical aspects of metals and welds, testing procedures and standards. Laboratory. No prerequisite. Must be taken in sequence. C

320-12 (4,4,4) Industrial Crafts. (a) Basic designing, decorating, and fabricating of a variety of craft materials such as reed, textiles, plastics, leather, ceramics, wood, and metal. (b) Continuation of basic fundamentals with special emphasis on art metal techniques and processing. (c) Emphasis upon creative design and new techniques with all craft media, but special emphasis on leather and industrial fabrics. Laboratory. Prerequisite: one course in drafting. C

322-9 (3,3,3) Machining of Metals. (a) Introduction to machine shop theory and practice: provides practice and information in using the basic machine tools. (b) Provides techniques and information in using basic and specialized machine tools. (c) Provides additional procedures and information in the use of specialized machine tools with emphasis on production problems. Laboratory. Must be taken in sequence. Prerequisite: one course in drafting. C

325-9 (3,3,3) Precision Forming and Shaping of Metals. (a) Advanced machine-tool techniques related to the production of precision-made metal parts. (b) Specialized machine-tool techniques for the development of devices used in the transmission of machine power. (c) Methods and procedures in the set up and scheduling of automatically controlled machine tools. Laboratory. Must be taken in sequence. Prerequisite: 322a. C

327-9 (3,3,3) Materials, Processes, and Fabrication of Metals. (a) Study of the basic tools, materials and processes used in a number of metalworking areas. (b) Designing, planning and fabrication of metal products; industrial processes and mass production applications; properties of metals. (c) Basic processes, materials, and equipment in forming, fabrication, and decorating of metal products with special emphasis on the non-ferrous metals and alloys. Laboratory. May be taken in any sequence. Prerequisite: one course in drafting. C

332-9 (3,3,3) Power Mechanics. (a) An introduction to the fundamentals of power development, generation, and transmission, including such areas as heat engines, hydraulics, wind, electrical levers, and gears. (b) Continuation of fundamentals of power with special emphasis on fuel type engines, their design, construction, operating principles, and major operating systems. (c) Automotive internal combustion engines, chassis and power transmission. Emphasis on construction, operation and care. Laboratory. Must be taken in sequence. No prerequisite. C

337-9 (3,3,3) Manufacturing Processes. (a) Analysis of tools and the basic processes of machining, forming and shaping materials used in modern manufacturing. (b) A study of the principles and procedures involved in casting, forming, and joining of industrial materials. (c) A study of fabrication, assembly, and methods of manufacture with emphasis on machine tools, automatic machines, and correlation of design with materials and processes. Lectures. Laboratory. Must be taken in sequence. No prerequisite. C

341-9 (3,3,3) Industrial Maintenance. (a) Care, repair, sharpening and maintenance of cutting tools, hand tools, portable power tools, and machine tools. (b) Installation procedures, equipment layout, replacement of parts, and upkeep of plant services, facilities and shop equipment; preventive maintenance procedures, inspection and inventory. (c) Characteristics, properties, and maintenance problems of mechanical equipment, hydraulic systems, and electrical motors and controls; lubrication, bearings, belts, drive components. Laboratory. Must be taken in sequence. Prerequisite: 312a, 327a. C

342-9 (3,3,3) Industrial Finishes. (a) Methods, tools, and equipment used in finishing the common industrial materials; surface preparations; application procedures, types of finishes; and restoring and refinishing techniques. (b) Industrial materials, processes and equipment used in applying protective and decorative coatings; spraying techniques and testing procedures used on industrial finishes. (c) Composition, properties, and performance of industrial finishes, metallic and organic coatings; management and theory of colors; and new industrial finishing processes. Laboratory. Must be taken in sequence. Prerequisite: 312a, 327a. C

343-9 (3,3,3) Electricity-Electronics. (a) An introduction to electricity and elec-

tronics. (b) Introduction to vacuum tubes and associated circuitry. (c) Advanced application of electronic theory with emphasis on electronic control circuits. Laboratory. Must be taken in sequence. No prerequisite. C

345-9 (3,3,3) Industrial Electronics. (a) Study of basic principles, concepts, and techniques in industrial application of electronics. (b) Analyses of complex circuits for fundamental principles and concepts which facilitate trouble shooting of industrial equipment. (c) Principles and concepts involved in multivibrators, oscillators, pulse generators and computer circuits. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 343a. C

351-9 (3,3,3) Industrial Tool Design. (a) Analysis of size and geometric specifications with emphasis on the design of comparative gauges. Fundamental principles involved with the design of woodholding devices; (b) The design of tools for the metal removal process including turning, broaching, milling, grinding, and automatic mechanism design; (c) Metal forming design involving blanking, bending, drawing, lancing, coining, forging, and other forming operations. Laboratory. Sequence is preferred but not required. Prerequisite: GSD 114c and Technology 101c. C

371-12 (4,4,4) Graphic Arts Technology. (a) Machine composition, including keyboard operation, nomenclature, use, care, and operation of linecasting machines. (b) Offset lithography, including camera work, plate making, and press work. (c) Printing design, including type design, commercial layouts, color, papers, cover design folders, booklets, bookbinding, presswork, printing economics, advanced lithography, advanced machine composition, and advanced printing mechanics. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 309a. C

400-9 (3,3,3) Plastics Technology. (a) Uses of plastic materials including laboratory research and techniques using various methods of fabrication and processing of plastic materials. (b) Properties of high polymers, stability, testing, rheology, mechanical, electrical, thermal, optical and chemical properties; specialty uses. (c) Plastics as materials of construction and their uses in industrial applications, laminates, engineering properties of rubbers, foams, adhesives and surface coatings; designing with plastics; plastics in electrical applications. C

465-8 (4,4) Industrial Safety. (Same as Industrial Education 465.) (a) Basic fundamental principles of industrial accident prevention; significant accident statistics and costs; appraising safety performances; industrial plant hazards and safeguards; fire control fundamentals. (b) Effective industrial safety organizations, management and supervision; safety psychology; safety training programs; industrial hygiene programs; health safeguards; occupational diseases and other industrial hazards. Prerequisite: junior standing. C

506-2 to 12 Industrial Design Research. C

INSTRUCTIONAL MATERIALS

301-2 The Instructional Materials Approach to Learning. An introductory course to the study of instructional materials. A survey of the history of libraries and audiovisual centers; the complete range of materials of teaching with their unique and common characteristics; the background of the school instructional materials program. C

306-4 School Libraries as Information Centers. Evaluation, selection, and use of reference sources for elementary and secondary school libraries. Principles and methods of reference service. C

308-4 Introduction to Cataloging (C); School Library Technical Processes (E). Organization of library materials for effective service. Acquisition, classification, cataloging, preparation, preservation, and circulation. Laboratory assignments.

400-2 Library Research Methods. Introduction to the use of library materials in graduate research. Includes a survey of scholarly publishing and the use of reference works in various subjects.

403-4 School Library Functions and Management. Effective library services in relation to the educational objectives of elementary and secondary school programs: organization, supervision, finance, housing, equipment, standards, and evaluation.

- 405-4 Library Materials for Children.** Study of the aids, methods, and criteria for the selection and use of books and other instructional materials for children in the elementary schools. Open to juniors with consent of instructor.
- 406-4 Library Materials for Adolescents.** A study of the aids, methods, and criteria for the selection and use of books and other instructional materials for students in the high school. Open to juniors with consent of instructor.
- 407-4 Basic Reference Sources.** E
- 410-4 Public Library Administration.** The administration of municipal, county, and regional libraries, both large and small, with emphasis on meeting the needs of different types of communities. C
- 413-4 Cataloging of Non-book Materials.** C
- 417-4 Audio-Visual Methods in Education.** Selection and utilization of instructional materials in the learning environment, elementary through adult levels. Audio and visual materials and procedures are emphasized with some attention given to bibliographies and reference books for teachers.
- 420-4 School Library Activities and Practice.** Supervised practice and observation integrated with instruction in the typical activities of school librarianship: storytelling, publicity, developing units of library instruction, and work with students. Prerequisites: 306, 308, 403, 405, or 406.
- 440-2 Photography for Teachers.** Techniques of picture-taking and the preparation of color slides of community resources for use in classroom instruction and for school public relations.
- 445-4 Preparation of Teacher-Made Audio-Visual Materials.** Laboratory practice in the preparation of bulletin boards, opaque materials, models, slides, recordings, felt-boards, and other graphic materials. Prerequisite: 417 or consent of instructor.
- 448-4 Supervision and Administration of an Audio-Visual Program.** C
- 450-2 Classroom Teaching with Television.** Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV, and definition of responsibilities are included. Demonstration and a tour of production facilities are provided. C
- 457-4 Radio and Television in the Classroom.** Educational programs and their value to the teacher in the classroom. Sample tapes of radio programs and kinescopes are used.
- 458-4 The Medium of the Motion Picture.** A study of the full range of expression by motion pictures including the documentary, theatrical, educational, experimental, and industrial films. Representative films are screened.
- 470-4 Programmed Automated Instruction.** The principles and practices of writing both linear and intrinsic types of programmed instruction with emphasis on pictorial and performance branches. Individual experience in planning and producing programs.
- 510-4 Mass Communications in Education.**
- 514-4 Survey of Research and Development in Instructional Materials.**
- 530-4 History of Books and Libraries.**
- 546-4 Integration of Audio-Visual Materials in the Classroom.**
- 547-4 School Film and Filmstrip Production.**
- 549-4 Visual Learning.**
- 554-4 Administration of an Instructional Materials Center.**
- 560-4 Seminar in Instructional Materials.**
- 576-2 to 8 Problems in Instructional Materials.** C
- 599-5 to 9 Thesis.** C

JOURNALISM

- 100-1 Current Events.** Contemporary events in the modern world and their treatment in the newspaper and periodical press. May not be counted toward the journalism concentration. C
- 101-3, 102-3 Introduction to Journalism, I, II.** Development of the newspaper and other media in America; role of the press in modern society.

- 103-3 News.** Study of the newspaper story with experience in writing and rewriting news; the fundamentals of copyreading. C
- 201-3, 202-3, 303-3 News Writing and Editing I, II, III.** How to cover assignments and write news stories; preparation of copy for publication; writing headlines; laboratory exercises. C
- 214-3 Typography.** Fundamental printing operations, use of type, illustrations, and other elements of layout and composition. C
- 260a-4 Fundamentals of Still Photography.** (See Printing and Photography 260.) C
- 265-4 Machine Composition.** (See Printing and Photography 265.) C
- 297-3 Introduction to Magazine Journalism.** The magazine as a journalistic medium. Its varied divisions in general circulation, professional, technical, industrial, and specialized publications. The nature and extent of magazine work: staff and free lance. C
- 310-4 Radio-TV News.** (See Radio-Television 310.) C
- 330-3 Editorial Writing.** The work and responsibility of the editor and editorial writer with emphasis upon editorial writing and thinking. Editorial problems, methods, policies, and style. C
- 331-3 Public Relations.** Study of current methods of planning and executing public relations policies; evaluation of media; preparation of campaigns. C
- 340-3 The Law of Journalism.** Legal limitations and privileges affecting publishing, fair comment, criticism, contempt of court, right of privacy, copyright, and legal provisions affecting advertising. E
- 345-3 History of Journalism.** Development of American journalism with emphasis upon the struggle for freedom of the press, leading editors, outstanding newspapers and periodicals. C
- 346-3 Comparative Journalism.** Analysis of editorial and management policies and methods of American newspapers, with particular reference to economic and social factors affecting them. C
- 350-3 The Community Newspaper.** The small newspaper recognized as a distinct medium, performing a specialized function for its readers. Equal weight given to the problem of news presentation and to leadership with careful examination of news and editorial policies of representative newspapers. C
- 351-3 Community Newspaper Management.** Organization, operation, and policy of the revenue departments of the weekly and small daily newspapers with special attention to the circulation procedures, retail, general, and classified advertising problems, and other phases of management. C
- 353-2 Advanced Newspaper Management.** C
- 360-12 (3,3,3 to 6) Publications Photography.** (See Printing and Photography 360.) C
- 369-3 Magazine Writing.** The writing of magazine articles by the free-lancer and staff member. Prerequisites: 103, 201, 202. C
- 370-3 Principles of Advertising.** Advertising fundamentals in relation to modern business activities; economic and social aspects, research, media, appeals, production, schedules. Prerequisite: Economics 205. C
- 370-4 Principles of Advertising.** Advertising fundamentals in relation to modern business activities; economic and social aspects, research, media, appeals, production, schedules. Prerequisite: GSB 211a. E
- 371-3 Advertising Salesmanship.** Practical application of the principles of advertising copy and layout as related to the mechanics and psychology of space selling. Students engage in daily work with newspaper advertisers, handling specific assignments in various lines of business. Prerequisite: 370. C
- 372-5 Advertising Copy, Layout, and Production.** The principles and practices in the preparation of copy and layout for all types and forms of advertising, as well as study of the processes involved in the production of advertising. C
- 373-3 Advertising Media and Markets.** Manufacturers' advertising procedures related to campaigns, markets and market research, media, and organization of the advertising function. Prerequisite: 370. C
- 374-3 Advertising Policies and Problems.** Application of advertising principles to merchandising, sales, promotion, research. Prerequisite: consent of instructor. C

- 376-4 Advertising Campaigns.** Application of advertising principles and skills to the solution of a specific problem; co-ordination of strategy and technique. Prerequisite: consent of instructor. C
- 382-3 Newspaper Circulation.** C
- 383-6 (3,3) Newspaper Production Management.** Organization and function of the mechanical department; costs and cost accounting; personnel problems. C
- 385-1 to 4 Radio-TV Special Events.** (See Radio-Television 385.) C
- 390-3 Advanced Reporting.** Covering city council meetings, courthouse, city hall, courts, society, and other special assignments. C
- 391-3 Feature Writing.** How to plan and write newspaper features and special articles. C
- 392-3 Reporting Special Events.** Experience in planning and executing coverage of conventions, expositions, and tours; special editions; interpretative news stories. C
- 393-3 Publicity Methods.** Not open to students with concentration in journalism. Designed for students who do not plan a career in writing, but desire guidance and practice in writing for newspapers and magazines about their fields of specialization. C
- 394-3 Agricultural Journalism.** C
- 396-3 Editorial Production.** Practical work in details of planning and producing one or more issues of a newspaper. Field trips. C
- 397-3 Special Publications.** The function and operation of industrial, trade, and business publications. Relationships of management and personnel through the editorial policies and practices of such special publications. C
- 398-3 Magazine Production and Layout.** The editorial and production functions of the magazine. Application of the principles of article layout and makeup to editorial content. Relationships with printing production. C
- 399-1 Senior Seminar.** Contemporary newspaper policies as related to professional journalism. To be taken in the student's last quarter. C
- 401-3 International Journalism.** A study of the history, development, current status and implications of the press and news services of other countries, and their relationship to the international communications system. C
- 420-2 to 4 High School Journalism Clinic.** For public school teachers. C
- 421-4 School Publications.** Designed for the prospective journalism teacher or high school publication director. Deals with practical production problems of newspapers and yearbooks. C
- 422-3 Teaching High School Journalism.** Teaching methods of journalism in secondary schools, organization and course of study, bibliography, use of journalism courses for school publications production. C
- 432-3 Communication Agencies and Public Opinion.** Press, radio, television, and motion pictures and their role in the opinion process. C
- 433-3 Measurement of Public Opinion.** The sampling survey as a research tool; survey methodologies. C
- 440-3 Content Analysis.** Theory and practice of various systems designed to reveal the orientation of editorial material in the mass media. C
- 442-3 The Law of Journalism.** Legal limitations and privileges affecting publishing, fair comment, criticism, contempt of court, right of privacy, copyright, and legal provisions affecting advertising. C
- 449-2 Practicum.** Study, observation, and participation in publication supervision. Work required on *The Egyptian* newspaper. C
- 479-3 Role of Advertising in our Society.** An exhaustive analysis of the literature covering such topics as: definitions and scope of advertising; advertising and the press; advertising as a social and economic force; evaluation of advertising, policies as related to the practices of specific business firms. C
- 495-3 Book Reviewing.** Theory and practice in reviewing modern books; study of newspapers and magazines devoted entirely or in part to this type of journalism. C
- 499-3 Summer Workshop in News Analysis in the Classroom.** A study of the relationship of the newspaper to other high school coursework. Time spent in developing ways of integrating the newspaper in the classroom. C

501-4 Literature of Journalism.	C
530-2 Seminar in Press Freedom.	C
532-4 Seminar in Public Opinion and Propaganda.	C
533-1 to 4 Research Problems in Journalism.	C
540-3 Philosophy of Journalism.	C
545-3 Studies in Journalism History.	C
599-1 to 8 Thesis.	C
600-1 to 36 Dissertation.	C

MANAGEMENT

170-4 Introduction to Business Administration. A survey of business, intended to give to the student a general knowledge of the modern business world, a better basis for choosing his specialty, and certain information not covered in the various specialized courses offered.

240-4 Introduction to Data Processing. Development of the concept of an organization; problems of co-ordination and control; feedback loop; management by exception. Study covers machine functions, procedure planning, flow charting and integrated data processing; also, the stored program concept, input-output methods and problems involved with electronic data processing equipment. Prerequisite: sophomore standing. E

241-4 Principles of Programming for Electronic Data Processing. Comparative study of stored program concepts, binary coding principles, study of machine language and symbolic coding; definition of problem and preparation of flow charts and block diagrams; symbolic programming system; timing sequences for input-output functions. Laboratory work involves practice problems requiring the preparation of flow charts, block diagrams, coding and preparation of source, program, and test running on IBM 1401 equipment. Three hours lecture; two hours laboratory. Prerequisite: 240-4, or equivalent, or consent of instructor. E

271-4 Business Writing. Principles and practice in writing typical kinds of business correspondence and reports. Prerequisite: GSD 152 (E); GSD 101 (C).

301-1 to 6 Management Readings. Reading in books and periodicals in a defined field, under direction of one or more staff members. Periodic written and oral reports. Prerequisite: consent of division head. E

320-5 Corporation Finance. Financial structure in industry, sources of capital, regulation of securities, of stock exchanges, and the Security and Exchange Commission; dividend and other financial policies. Interpreting corporation reports and evaluating securities through the analysis of financial statements. Prerequisites: Accounting 251c or consent of instructor, Economics 215 (C); Accounting 251c, Economics 210 (E).

323-4 Investments. Survey of the problems and procedures of investment management; types of investment risks; security analysis; investment problems of the individual as well as the corporation. Prerequisite: 320.

327-4 General Insurance. Underlying principles and functions of insurance in the economic life of the individual and of business. Prerequisite: junior standing or consent of instructor at Carbondale; Accounting 251c, Economics 210 at Edwardsville.

328-3 Real Estate. A study in real estate decision making and analysis of real estate problems. Examines the environment and variables; the background; the specialists on decision making; and, the purchase, financing, and estate planning decisions.

340-4 Business Organization and Management. Business organization, management theory, and practice. Prerequisite: junior standing or consent of instructor.

360-5 Seminar in Small Business. Provides final research into the special field of the small business major, helps him to decide upon the precise steps he will take in furthering his objective upon graduation. Open with the approval of the director of the Small Business Institute to senior students in that program. C

361-4 Business Report Writing. Discussion, illustration, and practical application of report-writing techniques, including study of uses, forms, and structures of different types of reports. Prerequisite: GSD 101 (C).

364-3 to 14 Small Business Management Internship I. On-the-job training in man-

agement of a specific small business in the area of the student's aims. All phases of management are covered. The student lives in the community and participates in the normal civic functions in order to parallel the true role of a small business man. Conference hours and working hours will be arranged. Students do not carry additional courses. Open only to approved majors in small business management. May be taken for one or two quarters, but not for more. C

365-3 to 14 Small Business Management Internship II. C

371-4 Business Law I. Introduction to the history and philosophy of law, contract law, and agency law.

372-4 Business Law II. Real property law, personal property law, partnership law, and corporation law. Prerequisite: 371 at Carbondale.

373-4 Business Law III. Negotiable instrument law, sales law, suretyship law. Prerequisite: 371.

380-4 Production Management. Plant location, design, and construction; internal organization for operations, production control, stores control, routing of materials, job analysis, and time study; wage systems, subdivision of executive responsibilities and duties; methods of coordination and planning. Prerequisite: Economics 210 at Edwardsville.

382-4 Time and Motion Study. Principles and methods for simplifying work and establishing sound time-standards for performance.

385-4 Personnel Management. Relations of the human element to production; the art of securing understanding and co-operation; employee organizations and outside activities; work of the personnel department; wage standards and working conditions. Prerequisite: junior standing or consent of instructor at Carbondale; Economics 210 at Edwardsville.

421-4 Management of Business Finance. The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Scope includes both short-term working capital and long-term financing. Prerequisite: 320.

428-4 Life Insurance. Particular attention given to policy forms and provisions, reserve and investment problems, company organization, legal aspects, taxation, and personal and business needs. Prerequisite: 327. C

442-4 Management of Data Processing Systems. A systematic examination of the principles and practices of data processing management. Includes installation layout, employment requirements, machine utilization, scheduling, work loads, interdepartmental relations, legal considerations, etc. Prerequisite: 241. E

451-4 Quantitative Business Analysis. Instructions in the use of quantitative methods for business. The early section of the course will deal with systems design and model-building. Quantitative techniques including linear programming, probability theory, inventory models, and queuing theory. Applications to case problems will be made. Prerequisite: One year of Statistics, Finite Mathematics, and one year of Calculus, or the equivalent if evaluated and approved in advance by the instructor. C

455-4 Programming for Digital Computers. Computer organization and characteristics, machine language-coding, flow charts, sub-routines, optimum and symbolic coding, compilers and interpretative systems. Laboratory uses Computing Center equipment. Prerequisite: consent of instructor. C

472-5 (C); 472-4 (E) Small Business. Small business analysis, primarily through case studies of business financing, location, organization, merchandising practices, records, government regulation, and taxes. Open only to students with concentration in business.

473-4 Business Enterprise and Public Policy. A social and legal evaluation of the federal laws designed to stimulate competition, emphasizing the anti-trust and fair trade laws, commission regulation, and public ownership. Prerequisite: senior standing.

475-4 Budgeting and Systems. Budgeting and system as aids in coordinating and directing business operation. Prerequisites: 320. Accounting 251c.

479-4 Problems in Business and Economics. C

479-2 to 8 Problems in Business and Economics. Application of economic theory to practical business problems. Prerequisite: senior standing (E).

480-4 Seminar in Labor Law. A legal and social evaluation of the most recent labor law problems and court decisions, including the Taft-Hartley Act and the 1959 amendments, Fair Employment Practice Laws and the Fair Labor Standards Act. Prerequisite: business law or Economics 310 or Government 395 or consent of instructor (C); two quarters of Business Law or Economics 310 (E).

481-4 Administrative Management. An intensive study of the principles of management and their application to the current industrial setting. Lecture and case methods will be used. Prerequisite: 340.

483-4 Advanced Production Management. Internal problems of managerial control of production including recent developments in theory and techniques: case material will be utilized for the development of analytical ability. Prerequisite: 380.

485-4 Problems in Personnel Management. Analysis of problems in personnel administration arising from current developments in organization and techniques; case problems and special reports. Prerequisite: 385.

500-2 to 5 Readings. C

501-2 to 5 Individual Research. C

521-4 Financial Policies. C

527-3 to 5 Seminar in Finance.

540-4 History and Theory of Management.

541-4 Quantitative Business Analysis. C

573-4 Business and Government.

576-4 Business Conditions Analysis. C

581-4 Business Policies. C

594-4 Seminar in Management. C

595-4 Seminar in Personnel Management.

596-4 Seminar in Production Management.

599-2 to 9 Thesis. C

MARKETING

225-3 Marketing and the Economy. A general (macro) approach to the subject. Attention is given to the structural organization of marketing institutions and to factors influencing the marketing environment. Consumption, costs, efficiency, and social productivity are also covered. Prerequisite: GSB 201b or 211b or Economics 214 or equivalent. C

230-5 Principles of Marketing. A general survey of the entire field of marketing. Consideration is given to the underlying economic principles; historical development of distributive systems, channels, agents, institutions, functions, policies, and principles. Prerequisite: Economics 210. E

301-1 to 6 Marketing Readings. Readings in books and periodicals in a defined field, under the direction of one or more staff members. Periodic written and oral reports. Prerequisite: consent of division head. E

325-4 Marketing and the Firm. A specific (micro) approach. Attention is given to the management of the marketing efforts of the individual firm. Emphasis on application of basic management concepts within the field of marketing and its areas of major functional activity: research, product planning, sales, advertising, traffic and inventory management, and distribution. Prerequisite: 225. C

329-4 Retail Management. Presents the basic principles and decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc. or retail and wholesale merchandising through an inter-related and managerial perspective. Prerequisite: 325 or concurrently. C

331-4 Retailing. Principles underlying the evolution, organization, and operation of retailing, including techniques used and opportunities offered in this field. Prerequisite: 325, or concurrently at Carbondale. E

332-4 Store Management. Store management; organization, location; layout. Procedures in receiving goods, handling sales; packing; wrapping; customer complaints; telephone orders, etc. Prerequisites: 331 and Accounting 250 or 251c. E

333-4 Advertising. Advertising fundamentals in relation to modern business activities;

fields of advertising; advertising media, campaigns, and systems. Prerequisite: 325, or concurrently, at Carbondale; 230 at Edwardsville.

334-4 Credits and Collections. Organization and operation of the credit department, including the sources and analysis of credit information, collection methods, and correspondence. Retail credit management emphasized. Prerequisite: 325 and Accounting 250 or 251c at Carbondale; 230 at Edwardsville. **E**

335-4 International Marketing. Factors affecting export and import marketing. Emphasis on international regulating bodies, trade agreements, channels of distribution, financing and governmental roles. Prerequisite: 230-5.

336-3 Purchasing. Dealer-supplier relationship, in manufacturing, wholesaling, and retailing. Purchasing for resale and for consumption. Influence in sales promotion materials. Buying from single and multiple suppliers. Prerequisite: 325, or concurrently, at Carbondale; 230 at Edwardsville.

337-4 Principles of Salesmanship. History, scope, and importance of selling in modern business; the sales department; the salesman's part in the selling process. Prerequisite: 325 or consent of instructor at Carbondale; or 230 at Edwardsville.

338-4 Consumer Behavior. An analysis and interpretation of the consumer's buying habits, motives, and the appeals marketing utilizes. The consumer's statistical, psychological, and socio-cultural nature will be stressed. Prerequisite: 230-5. **E**

339-4 Industrial Marketing. Economic and managerial factors affecting policy in the marketing of industrial goods. Channels of distribution, buying, advertising, pricing, research, and selling of industrial goods. Prerequisite: 230-5.

341-4 Transportation. Evolution of American transportation systems, and of the current problems of transportation facilities in connection with governmental control and regulation. Prerequisite: 325 or consent of instructor at Carbondale; or 230 at Edwardsville.

349-3 Wholesaling. Evolution, economic status, and management of non-retailing marketing. Position of wholesaling in distribution. Kinds of wholesaling; types of middlemen; internal organization and operation of wholesalers; trading areas. Analysis of relationships between marketing policies of wholesaler and manufacturer and changing patterns of wholesale distribution. Prerequisite: 325, or concurrently, at Carbondale; or 230 at Edwardsville. **E**

384-4 Advertising Media Analysis. A study of the businessman's problems of selecting appropriate advertising media for the particular advertising mix that affords him the best strategy. Prerequisite: 333. **E**

401-4 Problems of Retailing. An analysis of current problems and trends in distribution systems and in the marketing of consumer goods. Emphasis upon economic and legal aspects of the retail competitive environment, channels of distribution, retail store operation, and non-store retailing. Prerequisite: 329 or consent of instructor. **C**

438-4 Sales Management. Developing and training a sales force. The different types of sales forces. Managing sales functions: determining salesman's territories, quotas, compensation. Budget preparation. Developing and implementing the merchandise plan. Prerequisite: 325 or to be taken concurrently (C); 230 and 337 or consent of instructor. (E)

444-4 Marketing Management. Marketing management's place in theory and as a part of the marketing process. Emphasis given to planning the marketing effort, management of the marketing organization and control of marketing operations. Prerequisite: 230-5, senior standing. **E**

451-4 Traffic Management. Primary industrial traffic management functions, including determination of rates, classification, routing, and proper documentation. Consideration given to loss and damage claims, terminal charges, demurrage, reconsignment and conversion, transit privileges, warehousing, and packing. Emphasis upon co-operative aspects of traffic management requiring transportation. Prerequisite: 341. **E**

452-4 Physical Distribution Management. A systematic, integrated treatment of problems of managing the flow of raw materials, parts, semi-manufactured and finished goods from their sources to the ultimate consumer. Attention will focus on

spatial relationships of plant capacity and storage facilities and their connecting link, transportation. Topics include transportation service availability, plant location theory, distribution and transfer cost analysis, inventory control, and other matters influencing distribution system design. Prerequisite: 341.

463-4 (C); 463-3 (E) Advertising Management. The effective use of advertising by business management. An understanding of what advertising can be expected to accomplish under different sets of marketing factors and products. The selection of advantageous advertising programs under different marketing mixes. Prerequisite: 333 or consent of instructor (C); 333 (E).

490-4 Marketing Research and Analysis. A nonmathematical development of the basic procedures, methods, and theory underlying analysis of primary and secondary market data. Prerequisites: 325, and one quarter of basic statistics or its equivalent (C); 230 and one quarter of basic statistics or its equivalent (E).

500-2 to 5 Readings in Marketing. C

501-2 to 5 Individual Research in Marketing. C

510-4 Product Strategy and Management. C

550-4 Graduate Survey of Marketing. C

555-4 Marketing Theory. C

560-4 Marketing Policies. C

575-4 Seminar in Transportation. C

590-4 Advanced Marketing Research and Analysis. C

595-3 Seminar in Marketing. C

599-2 to 9 Thesis.

MATHEMATICS

111-10 (5,5) Elementary Analysis. Beginning course for students in mathematics, pre-engineering, etc., who cannot qualify for 150. Includes: (a) Sets, logic, real number system, and college algebra; (b) Functions and trigonometry. Must be taken in a,b sequence. Part (a) may not be taken for credit after GSD 114a,b. Part (b) may not be taken for credit after GSD 114c. Prerequisite: (a) three semesters of high school algebra and satisfactory A.C.T. score. (b) Part a; GSD 114a,b; or advanced standing. E

150-10 (5,5) Elementary Calculus and Analytic Geometry. Elementary differential and integral calculus with analytic geometry and applications. Includes the definite integral and differentiation of transcendental functions. Must be taken in a,b sequence. Prerequisites: GSD 114b,c. C

220-4 Elementary Statistics. C

225-4 Programming for Digital Computers. An intensive course. Topics include computer organization and characteristics, machine language coding, flow charts, subroutines, symbolic coding, and compiler systems. Equipment of the University's Data Processing and computing Center is used for applications. Prerequisite: GSD 108c, 114c, or consent of instructor at Carbondale; 111a or GSD 114b at Edwardsville.

252-9 (5,4) Calculus and Analytic Geometry. Continuation of 150. Includes differential and integrated calculus, applications, introduction to solid analytic geometry, infinite series. Must be taken in a,b sequence. Prerequisite: 150b.

300-4 The Real Number System. An axiomatic study of the real number system by use of modern logic and elementary set theory. Prerequisite: 150b. E

305-6 (3,3) Applied Mathematics for the Physical Sciences. (a) Ordinary differential equations, linear algebra, and applications. (b) Additional topics in applied mathematics such as finite difference methods, Laplace transforms, and Fourier series. Must be taken in a,b sequence. Prerequisite: 252b (also Physics 211c for Edwardsville students).

310-4 The Teaching of Elementary Mathematics. A professional treatment of the subject matter of arithmetic methods and a study of trends and current literature on the teaching of arithmetic. For elementary education concentration only. Prerequisite: GSD 112-9 (E); GSD 108b (C).

311-3 The Teaching of Secondary Mathematics. A study of the nature and objectives

of the secondary mathematics curriculum. Particular attention is given to the means of introducing new ideas into the high school program. For students preparing to be certified teachers of secondary mathematics. Does not count toward a mathematics concentration for Bachelor of Arts degree students. Prerequisite: 320a at Carbondale; or 320b, Secondary Education 315 at Edwardsville.

320-6 (3,3) Fundamental Concepts of Algebra. Introduces abstract algebraic structures, including groups, rings, and fields. Attention is given to classical theory of numbers and polynomials. Must be taken in a,b sequence. Prerequisite: 150b at Carbondale; 300 at Edwardsville.

324-3 Vector Analysis. Prerequisites: 252b; Physics 211a. E

335-6 (3,3) Concepts of Geometry. An elementary introduction to various geometric systems to acquaint the student with the interrelationship between geometries of current interest. Topics include axiom systems, absolute plane geometry, Euclidean geometry, and non-Euclidean geometry. Must be taken in a,b sequence. Prerequisite: 252a or consent of instructor (C); 300 or concurrent enrollment (E).

395-2 to 8 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 12 hours of 300- or 400-level mathematics, 4.0 average in mathematics, and consent of chairman of department.

400-3 History of Mathematics. An introduction to the development of major mathematical concepts. Particular attention given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in the development of mathematics from 600 B.C. to the present time. Prerequisite: 150b, 320a (E); 320a or consent of instructor (C).

407-3 Introduction to Partial Differential Equations. A continuation of 305. Topics in applied mathematics including linear partial differential equations, Bessel functions, and vector analysis. Prerequisite: 305b.

410-16 (4,4,4,4) Statistical Analysis. For students in fields using statistical methods but who are not required to take calculus. Includes (a) elements of probability, estimation, and testing hypotheses; (b) the general linear model (multiple linear regression, analysis of variance, analysis of covariance) and non-parametric statistics; (c) design of experiments; (d) sample survey techniques. May not be used to satisfy requirements for a mathematics concentration. Three lectures and two laboratory hours per week. Must be taken in either a,b,c,d or a,b,d,c sequence. Prerequisites: GSD 108c (C); 111a or GSD 114b (E).

413-4 Solid Analytic Geometry. An algebraic study of equations of the first and second degree in three variables, with applications to geometry. Systems of planes; equations of lines in symmetric and parametric form. Spheres, cylinders, surfaces of revolution. Matrix algebra; real orthogonal and symmetric matrices. Coordinate transformations; orthogonal similarity. Quadratic forms and quadric surfaces; invariants; principal axes and planes. Prerequisite: 252b or consent of chairman.

415-4 Non-Euclidean Geometry. An introduction to hyperbolic and elliptic plane geometry and trigonometry. Emphasis given to the nature and significance of geometry and the historical background of non-Euclidean geometry. Prerequisite: 252a. E

420-3 Orthogonal Functions. Principal emphasis on Fourier series and applications. Also includes discussion of other orthogonal sets, such as the Legendre's polynomials, and orthogonalization procedures, such as Gram-Schmidt. Prerequisite: 252b. C

421-6 (3,3) Linear Algebra. The theory of determinants and systems of linear equations; vector spaces, linear independence, bases, dimension; linear transformations, change of base, similarity; quadratic and Hermitian forms, orthogonal and unitary transformations; triangular and diagonal form; eigenvalues and eigenvectors; normal matrices; nilpotent and idempotent matrices, the spectral theorem. Must be taken in a,b sequence. Prerequisite: 252b.

425-3 Theory of Numbers. Topics in elementary number theory, including properties of integers and prime numbers, divisibility. Diophantine equations, and congruence of numbers. Prerequisite: 320a.

426-6 (3,3) Mathematical Logic. (Same as Philosophy 426.) (a) Matrix and set theoretic development of the propositional calculus, many-valued logics, modal logics.

Completion and consistency proofs for the propositional calculus. (b) A formal development of the predicate calculus and related problems. Must be taken in a,b sequence. Prerequisite: 320a or consent of instructor.

430-4 Projective Geometry. Introduction to the fundamental concepts of projective geometry. Topics usually include the study of conics, polar systems of conics, homogeneous coordinates, cross-ratio, harmonic sets, duality, projectivities, and involutions. Prerequisite: 252a or consent of instructor (C); 320a (E).

433-3 Theory of Point Sets. General properties of sets; topology of plane sets; closed sets and open sets in metric spaces, homeomorphisms and continuous mappings, connectedness. Prerequisite: 252b and six credits in courses numbered 300 or higher, or consent of instructor (C); 300 (E).

440-2 to 4¹ Modern Algebra for Teachers. An introduction to algebra as a logical system, including groups, rings, and fields. Prerequisite: consent of instructor.

442-2 to 4¹ Survey of Geometry. A survey of geometry, including projective geometry, topology, etc. Prerequisite: consent of instructor.

446-4 The Structure of Elementary School Mathematics. A course to assist experienced elementary school teachers in extending their understanding of mathematics. This course may not be taken for credit after credit has been received for 447 and does not count for credit toward a mathematics concentration. Prerequisite: experience in elementary teaching and consent of instructor. E

447-4 The Structure of Secondary School Mathematics. A course to assist experienced secondary school teachers in extending their understanding of mathematics. This course may not be taken for credit after credit has been received for 446 and does not count toward a mathematics concentration. Prerequisite: experience in secondary teaching and consent of instructor. E

452-9 (3,3,3) Advanced Calculus. Fundamental concepts of analysis: limits, continuity, differentiation, and integration. Major topics include partial differentiation, vector analysis, Riemann-Stieltjes integrals, multiple integrals, infinite series, improper integrals, uniform convergence, Fourier series, and line and surface integrals. Must be taken in a,b,c sequence. Prerequisite: 252b (C); 300 (E).

456-6 (3,3) Applied Mathematics for the Behavior Sciences. E

458-6 (3,3) Finite Mathematics. An introduction to topics in finite mathematics such as logic, sets, probability, linear algebra, and Markov chains. This course is designed for students preparing for high school teaching and for advanced students in the behavioral sciences. Prerequisite: 252a or consent of instructor. C

460-4 Modern Geometry. Advanced topics in Euclidean geometry by the synthetic method. Topics include the nine-point circle, Simson line, theorems of Ceva and Menelaus, coaxal circles, harmonic section, poles and polars, similitude, and inversion. Prerequisite: 20 hours of college mathematics (C); 300 (E).

475-9 (3,3,3) Numerical Analysis. Introduction to approximation methods including finite differences and interpolation; numerical differentiation and quadrature; least squares approximation; numerical solution of linear and non-linear systems; numerical integration of systems of ordinary and partial differential equations. Emphasis upon error analysis throughout. Must be taken in a,b,c sequence. Prerequisite: 305a or 252b and consent of instructor.

480-10 (4,3,3) Probability. Introduction to probability theory. Includes the algebra of possibilities; discrete and continuous distributions, limit theorems, generating functions, and some elements of stochastic processes. Must be taken in a,b,c sequence. Prerequisite: 252b.

483-4 Statistical Inference. A mathematical introduction to statistical methods. Topics include sampling distributions, estimation, tests of hypotheses, and regression analysis. Prerequisite: 480a.

484-4 Design of Experiments. A study of the mathematical and practical considerations involved in the statistical design and analysis of experiments. Consideration given to common experimental designs and such topics as missing plots, experimental constraints, efficiency of method, and separation of degrees of freedom. Prerequisite: 483.

501-9 (3,3,3) Real Variables.

505-9 (3,3,3) Theory of Ordinary Differential Equations.	C
510-4 Foundations of Mathematics.	
520-8 (4,4) Modern Algebra.	
530-6 (3,3) Point Set Topology (C); 530-6 (3 to 6) (E).	
531-6 (3,3) Algebraic Topology.	C
536-3 Differential Geometry.	
540-4 Groups and Linear Transformations.	
541-2 to 4 Sets and Probability.	E
542-2 to 4 Elementary Functions from an Advanced Standpoint.	E
544-2 to 4 Fundamental Concepts of Calculus.	
545-4 Intermediate Analysis for High School Teachers.	
546-4 Convex Figures.	C
550-1 to 10 Seminar.	
551-9 (3,3,3) Functional Analysis.	C
555-9 (3,3,3) Complex Variables.	
560-6 (3,3) Calculus of Variations.	C
580-9 (3,3,3) Mathematical Methods of Statistics.	C
592-3 Research in Mathematics Education.	C
595-1 to 10 Special Project.	
599-1 to 9 Thesis.	

MICROBIOLOGY

- 301-5 Principles of Microbiology.** A survey of morphology, structure, metabolism, population dynamics, and heredity of the microbial agents, with particular emphasis on pure culture methods of study of the bacteria, viruses, and related organisms. 4 hours lecture, 5 hours laboratory. Prerequisite: one year of college chemistry and GSA 201a or equivalent. C
- 302-5 General Microbiology.** Interrelationships of microorganisms and their positions and influence in the biological world; relationships to soil fertility, host-parasite relationships, mechanisms of infection and resistance, principles of chemotherapy, and their exploitation by man in medicine and industry. 3 hours lecture and 5 hours laboratory. Prerequisite: 301. C
- 350-1 to 3 Readings in Microbiology.** C
- 401-1 Seminar.** (For undergraduates only.) Prerequisite: senior standing and consent of instructor. This course may be taken for credit once only. C
- 403-5 Medical Bacteriology.** A general survey of the mechanisms of infection, epidemiology, and immunity and the specific application of these principles to the symptomatology, diagnosis, treatment, and control of the more common bacterial infections of man. 3 hours lecture and 4 hours laboratory. Prerequisite: 301 and 302. C
- 422-5 Microbiology of Foods.** The relationships of microorganisms to the preparation and preservation of foods with consideration of the laws governing sanitation, chemical preservatives, and fair dealing of the food producer. 3 hours lecture, 4 hours laboratory. Prerequisite: 301. C
- 423-5 Industrial Fermentation.** The application of the chemical activities of microorganisms to the industrial production of beverages, foods, antibiotics, and various commercial chemicals. 3 hours lecture, 4 hours laboratory. Prerequisites: 301 and organic chemistry. C
- 424-5 (3,2) Soil Microbiology.** C
- 425-3 Biochemistry and Physiology of Microorganisms.** The chemical basis of physiological functions in microbial cells with emphasis on the pathways of metabolism common to all living things. 3 hours lecture. Prerequisites: 301 and organic chemistry. C
- 426-2 Biochemistry and Physiology of Microorganisms.** 4 hours laboratory. Prerequisite or corequisite: 425. C
- 441-6 Virology.** Properties, cultivation and titration of viruses and rickettsiae; cellular infection, multiplication and liberation of virus; immunological reactions and

serological identification; hemagglutination and interference phenomena. Consideration of selected viral and rickettsiae diseases of animals. 3 hours lecture, 6 hours laboratory. Prerequisite: 451 and consent of instructor. C

451-6 Immunology. Natural and acquired immunity; antigens, antibodies and antigen-antibody reactions; hypersensitivity; practical use of immunity and hypersensitivity. 3 hours lecture, 6 hours laboratory. Prerequisite: 403 and consent of instructor. C

500-1 Seminar.

501-2 Genetics of Microorganisms. C

503-2 Cytology of Microorganisms. C

504-5 Methods of Microbiological Research. C

506-2 Bibliographical Methods in Microbiology. C

511-1 to 15 Research. C

525-3 Biochemistry and Physiology of Microorganisms. C

526-2 Biochemistry and Physiology of Microorganisms. C

528-1 to 10 Readings in Microbiology. C

550-4 Microbiology for High School Teachers. C

551-2 Intermediate Microbiology for High School Teachers. C

552-1 Seminar in Biological Sciences. C

599-3 to 9 Thesis. C

600-3 to 48 Dissertation. C

MUSIC

001-4 (1,1,1,0,1) Band. (a) Saluki Marching Band, (b) Symphonic Band, (c) Stage Band, (d) Laboratory Band, and (e) Wind Ensemble. Prerequisite: b,c,e by audition; a,d by consent of instructor. C

001-1 (1,0,0) University Bands. (a) Symphonic Band, (b) Stage Band, (c) Instrumental Laboratory. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: a,b by audition, c by consent of instructor. E

002 (1,1,1,1) (a) Chorus, (b) Chorus Oratorio, (c) Collegiate Singers, (d) University Chorus. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisites: Auditions required for a, c, d. C

002-7 (1,1,1,1,1,1,1) Choral Ensembles. (a) Collegiate Singers, (b) University Chorus, (c) Male Chorus, (d) Women's Glee Club, (e) Southern Illinois University Community Choral Society, (f) Madrigal Singers, (g) Concert Chorale. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: auditions for a,f,g. E

003-1 Orchestra. C

010A-1 Class Violin C

010B-1 Class Viola. C

010C-1 Class Cello. C

010D-1 Class String Bass. C

011-1 to 4 Private Violin. C

012-1 to 4 Private Viola. C

013-1 to 4 Private Cello. C

014-1 to 4 Private String Bass. C

020A-1 Class Flute. C

020B-1 Class Oboe. C

020C-1 Class Clarinet. C

020D-1 Class Bassoon. C

020E-1 Class Saxophone. C

021-1 to 4 Private Flute. C

022-1 to 4 Private Oboe. C

023-1 to 4 Private Clarinet. C

024-1 to 4 Private Bassoon. C

025-1 to 4 Private Saxophone. C

030-1 Class Percussion. C

031-1 to 4 Private Percussion.	C
040-1 Class Piano.	C
041-1 to 4 Private Piano.	C
050A-1 Class French Horn.	C
050B-1 Class Trumpet.	C
050C-1 Class Trombone.	C
050D-1 Class Tuba.	C
050E-1 Class Baritone.	C
051-1 to 4 Private French Horn.	C
052-1 to 4 Private Trumpet.	C
053-1 to 4 Private Trombone.	C
054-1 to 4 Private Tuba.	C
055-1 to 4 Private Baritone.	C
060-1 Class Voice.	C
061-1 to 4 Private Voice.	C
070-1 Class Organ.	C
071-1 to 4 Private Organ.	C
010-6 (1,1,1,1,1,1) Class Applied Music. Offered in all areas of applied music except organ. These courses include the minimum instruction required for passing the proficiency examinations in piano and voice and they offer practical training in the basic principles of playing the instruments of the orchestra and band. They also include introductory techniques and methods for teaching instrumental and choral groups in the elementary and secondary schools.	E
a. Strings	d. Percussion
b. Woodwinds	e. Piano
c. Brass	f. Voice

May be taken in any sequence.

140, 240, 340, 440, 540-2 or 4 Private Applied Music. Offered at five levels in the areas listed below. Credit is given at two or four hours on each level. Consult with adviser for details of credit and requirements. May be repeated for three quarters at each level. Students with a concentration in Performance usually take 4 hours. Concentrations in music education and all secondary concentrations usually take 2 hours. Prerequisite for 140; music concentration or secondary concentration or consent of music faculty. Prerequisite for higher levels: three quarters at the previous level on the same instrument or consent of instructor.

a. Violin	j. Percussion
b. Viola	k. Piano
c. Cello	l. French Horn
d. String Bass	m. Trumpet
e. Flute	n. Trombone
f. Oboe	o. Tuba
g. Clarinet	p. Baritone
h. Bassoon	q. Voice
i. Saxophone	r. Organ

141-0 Recital Class. E

105-12 (4,4,4) Theory of Music. Fundamentals of music in sight singing, ear training, harmony, and keyboard harmony. C

105-12 (4,4,4) Theory of Music. Fundamentals of music through sight singing, dictation, written, and keyboard harmony. Must be taken in a,b,c sequence. Prerequisite: piano proficiency or concurrent enrollment in 010e. E

200-3 Fundamentals of Music. Rudiments of music for those with little or no musical background. Recommended as a course preliminary to 300 (not for music concentrations). May be taken concurrently with 010e.

205-9 (3,3,3) Theory of Music. Advanced harmonic techniques, modulation, altered chords, chromatic harmony, counterpoint (E), and introduction to contemporary harmonic principles. Must be taken in a,b,c sequence. Prerequisite: 105c.

240-2 or 4 Private Applied Music. (See Music 140). E

300-6 (3,3) Music Education—Elementary. Teaching music in the elementary

grades. (a) For music concentrations only. (b) For non-music concentrations only. Prerequisite: 200 or equivalent. C

300-3 Music Education—Elementary. Teaching music in the elementary grades. For non-music concentrations only. Prerequisite: 200 or equivalent. E

301-9 (3,3,3) Music Education. (a) Music in the elementary school curriculum, grades K-6. Analysis of instructional materials, development of rhythmic and melodic expressions, creative, instrumental, listening activities. Creating a musical environment in the classroom. (b) Junior high school: Curriculum, organization, and administration of choral, instrumental, and general music classes; resource units; the adolescent voice. (c) Senior high school: Curriculum, organization, and administration of choral, instrumental, and general music classes. May be taken in any sequence. For music concentration only. E

303-3 Music Education—Secondary. Teaching music in the high school. C

305I-3 Instrumental Problems and Materials. Administration of the school instrumental music program. Emphasis on library, physical facilities, organization of the marching band, arranging music for out-of-door performances. C

305V-3 Vocal Problems, Materials, and Conducting. Vocal and psychological problems in handling choral groups, reading and acquaintance with a variety of choral materials at the high school level, and interpretation through conducting techniques. C

307-4 Recreational Music. For those interested in the less formal approach to music and for prospective leaders of recreational activities.

308-4 Folk Music. Comparison of folk music collected in Southern Illinois with that of other areas with emphasis on melodic structure and textual variants. Use of folk music by composers, ethnic groups, and recreational leaders. Prerequisite: 105c or consent of instructor. C

309-6 (2,2,2) Arranging. (a) Rudiments of arranging, choral and instrumental. (b) Techniques of arranging for the small ensemble. (c) Techniques of arranging for the large ensemble. Must be taken in a,b,c sequence. Prerequisite: 105c. C

309-6 (3,3) Orchestration. The techniques of writing for orchestral instruments. Must be taken in a,b sequence. Prerequisite: 205c. E

312-6 (2,2,2) Composition (a,b,c). Original composition in the smaller forms for piano, voice, string quartet, and other small combinations. Prerequisite: 205c. C

312-6 (3,3) Composition. (a) Original composition in the smaller forms for piano, voice, string quartet, and other small combinations. (b) Original composition in the larger forms. Must be taken in a,b sequence. Prerequisite: 205c. E

315-2 Opera Repertory.

317-2 Instruments for Music Recreation. Practical information in performance, use, and building of instruments. For use in community recreational music programs. Prerequisite: 307. C

318-6 (2,2,2) Conducting. (a) Basic conducting techniques. (b) Choral conducting techniques. Prerequisite: 318a, (c) Instrumental conducting techniques. Prerequisite: 318a. C

318-6 (3,3) Conducting. (a) General: Fundamental conducting patterns, size of beats, use of each hand; conducting experience with laboratory groups both choral and instrumental; discussion and study of musical terminology. (b) Choral and Instrumental: Continued conducting experience through laboratory group; study of rehearsal techniques, balance, blend, and the relationship of parts to the total ensemble; evaluation and analysis of literature suitable for school groups of all levels of ability. Must be taken in a,b sequence. E

326-9 (3,3,3) Analysis. The element of structure, form, and design in musical composition. Prerequisite: 205c. C

326-6 (3,3) Analysis. (a) Analysis of the important musical forms and styles from plain song through the 12-tone technique with emphasis on forms of the 18th and 19th centuries. (b) Analysis of the larger homophonic and contrapuntal forms from the 18th century to the present. Must be taken in a,b sequence. Prerequisite: 205c or consent of instructor. E

340-2 or 4 Private Applied Music. (See Music 140.) E

342-6 (2,2,2) Advanced Composition. Required of undergraduates with concentra-

tion in theory-composition, culminating with original works in contemporary idioms. Taught by individual instruction. Prerequisite: 312c and consent of department. C

345-1 Chamber Choir. C

346-2 to 12 Opera Workshop. C

350-3 Principles of Church Music. C

351-3 Organ in the Church Service. C

352-3 Choir in the Church Service. C

355-1 Chamber Music. String ensemble. May be repeated for credit. C

355-4 (1,1,1,1) Chamber Music Ensembles. (a) Brass, (b) Woodwinds, (c) Strings, (d) Percussion. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: consent of instructor. E

GSC 357-9 (3,3,3) Music History and Literature.

365-1 Chamber Music. Woodwind and brass ensemble. C

411-9 (3,3,3) (a) Symphonic Literature. Development of the symphony and the symphonic poem to 1900. (b) Choral Literature. The literature of the larger vocal forms such as the cantata and oratorio to 1900. (c) Chamber Music Literature. Chamber music literature from the Renaissance to the present. E

411-3 Symphonic Literature.

412-3 Choral Literature.

413-3 Chamber Music Education.

414-2 to 6 Collegium Musicum.

440-2 or 4 Private Applied Music. (See Music 140.) E

441-6 (2,2,2) Counterpoint. (a) 16th Century Counterpoint. Special counterpoint and creative writing in the style of Palestrina and his contemporaries. Prerequisite: 205c. (b) 18th Century Counterpoint. Analysis and creative writing in the contrapuntal-harmonic technique of Bach and his contemporaries. Prerequisite: 205c. (c) Canon and Fugue. Analysis and creative writing of the larger imitative forms. Prerequisite: 441b. C

442-6 (3,3) Contrapuntal Form. E

451-2 (C), 3 (E) The Teaching of General Classroom Music.

455-2 to 6 Elementary Music Education Workshop.

461-2 (C), 6 (3,3) (E) (a) Teaching Techniques and Materials for the Beginning and Intermediate Levels. Designed to meet the needs of applied students in the Bachelor of Music or Master of Music degree programs in which the problems of private studio teaching and college-level teaching are discussed. (b) Teaching Techniques and Materials for the Advanced Student. Prerequisite: 461a.

462-2 Teaching Techniques and Materials for the Advanced Student.

465-3 Development and Teaching of Strings. Place and function of string education in the elementary and secondary schools. Techniques of heterogeneous and homogeneous string teaching. Developing and sustaining interest in the string program. Resource aids. May be repeated for a total of 9 hours credit. Prerequisite: Senior standing. E

471-2 to 8 Private Piano. C

472-2 to 8 Private Voice. C

473A-2 to 8 Private Violin. C

473B-2 to 8 Private Viola. C

473C-2 to 8 Private Cello. C

473D-2 to 8 Private String Bass. C

474A-2 to 8 Private Flute. C

474B-2 to 8 Private Oboe. C

474C-2 to 8 Private Clarinet. C

474D-2 to 8 Private Bassoon. C

474E-2 to 8 Private Saxophone. C

475A-2 to 8 Private Trumpet. C

475B-2 to 8 Private French Horn. C

475C-2 to 8 Private Baritone. C

475D-2 to 8 Private Trombone. C

475E-2 to 8 Private Tuba. C

476-2 to 8 Private Organ.	C
477-2 to 4 Private Percussion.	C
481-2 to 6 Readings in Music Theory.	
482-2 to 6 Readings in Music History and Literature.	
483-2 to 6 Readings in Music Education.	
501-3 Introduction to Graduate Study in Music.	
502-9 (3,3,3) (a,b,c) History and Analysis of Musical Style.	
503-3 Objective Research Techniques in Music Education.	C
512-3 History of Opera.	C
515-3 20th Century Literature.	
518-3 Pedagogy of Music Literature.	
520-3 American Music.	
522-3 Seminar: Music History and Literature.	
531A-3 to 9 Music History.	
531B-3 to 9 Music Literature.	
530C-3 to 9 Music Theory.	
531-3 to 9 Advanced Composition.	C
535-3 Contemporary Idioms.	
540-2 or 4 Private Applied Music. (See Music 140.)	E
545-3 to 9 Philosophy of Music Theory.	C
550-3 (C), 4,4 (E) (a) Administration and Supervision of Music (Elementary).	C
(b) Organization and Administration of Music in the Elementary School.	E
(c) Organization and Administration of Music in the Secondary School.	E
551-2 to 4 Organization and Administration of Music—Secondary.	
553-6 (3,3) Seminar in Choral Materials and Techniques.	
554-3 Seminar in Instrumental Materials and Techniques.	C
556-2 to 6 (C); 3 (E) Advanced Conducting.	
560-2 to 3 (C); 3 (E) Seminar in Music Education.	
566-1 to 4 (C); 1 (E) Instrumental Ensemble.	
567-1 to 4 (C); 1 (E) Vocal Ensemble.	
568-2 to 8 Opera Workshop.	C
571-4 to 16 Private Piano.	C
572-4 to 16 Private Voice.	C
573A-4 to 16 Private Violin.	C
573B-4 to 16 Private Viola.	C
573C-4 to 16 Private Cello.	C
573D-4 to 16 Private String Bass.	C
574A-4 to 16 Private Flute.	C
574B-4 to 16 Private Oboe.	C
574C-4 to 16 Private Clarinet.	C
574D-4 to 16 Private Bassoon.	C
574E-4 to 16 Private Saxophone.	C
575A-4 to 16 Private Trumpet.	C
575B-4 to 16 Private French Horn.	C
575C-4 to 16 Private Baritone.	C
575D-4 to 16 Private Trombone.	C
575E-4 to 16 Private Tuba.	C
576-4 to 16 Private Organ.	C
577-2 to 16 Private Percussion.	C
599-3 to 9 Thesis.	

NURSING

- 101-3 (1,1,1) **Orientation to Nursing.** An orientation to the philosophy and functions of nursing in contemporary society. Field trips to various health agencies.
- 210-2 **Normal Nutrition.** This is a non-laboratory course in which principles of normal nutrition are studied. The ability to use diet variations with people of different cultural backgrounds and economic levels is stressed. E

Courses on the 300 level are open only to students concentrating in nursing.

301-8 Obstetric Nursing. Study of the principles of nursing care of mother and baby throughout the maternity cycle. Supervised experience and clinical conferences correlated with theory. E

302-8 Pediatric Nursing. Study of principles of nursing care of children during illness. Supervised experience and clinical conferences correlated with theory. E

303-3 Experience with Pre-School Children. Given concurrently with Child Psychology. Observation and study of the behavioral development of young children. Day care centers, schools, and other health agencies are used as settings for the educational experiences. E

325-8 Psychiatric Nursing. Emphasis on the nurse-patient relationship, leading to development of interpersonal skills which result in the nurse's ability to observe and interpret behavior, to communicate with others, and to understand the significance of such abilities in a broad social context. Supervised experiences and clinical conferences correlated with theory. E

355-4 Backgrounds and Trends in Nursing. A study of nursing at the present time in relation to historical and other influences upon it. The implications for its future developments are considered. E

363-23 (9,6,8) Medical-Surgical Nursing. (1) Investigations of the scientific basis of health and physical, emotional, mental, and social deviations caused by illness. Learning experiences are based on the scientific knowledge obtained in related and correlated subjects. Emphasis upon the health needs of individuals and society, cooperative endeavors with members of the health team, and the professional nurse's unique contribution in terms of preventive, therapeutic, and rehabilitative care. (2) Supervised experience and correlated conferences in the care of individuals with medical and surgical conditions. E

375-8 Public Health Nursing. Objectives, principles, and practices in public health nursing, application of nursing science and art are related to family and community living. Supervised experience in a public health agency conducting a generalized program. Includes orientation, demonstrations, and conferences. Prerequisite: Health Education 355, or concurrently. E

381-3 Principles & Methods of Teaching in Nursing. This course offers principles and methods of teaching applicable by all professional nurses in their role as teachers working with patients, families, health teams and other individuals and groups interested in health. Prerequisite: juniors and seniors with a concentration in nursing. E

382-6 Development of Leadership in Nursing. Emphasizes the need for responsible leadership in Nursing. Basic principles of administration and supervision are studied as means of developing effective relationships within health and nursing teams and other institutional and community situations. Prerequisite: juniors and seniors with a concentration in nursing. E

384-2 Senior Seminar. Study in areas of nursing which present certain professional, national, and international challenges. E

PHILOSOPHY

200-4 Types of Philosophy: An Introduction. Survey of the traditional branches and problems of philosophy, such as religion, metaphysics, epistemology, ethics, political theory, aesthetics, and history.

240-4 Ethics. Study of significant ethical theories concerned with such problems as the nature of right and wrong, individual and social values. E

300-4 Elementary Metaphysics. Presentation of answers to the most general problems of existence. An attempt to unify all scientific approaches to reality through the laying down of common principles.

301-4 Philosophy of Religion. An analysis of problems in the psychology, metaphysics, and social effects of religion. Among topics discussed are the nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality.

- 302-4 World Religions.** An historical and comparative study of the principal religions of the world. Particular attention is given to such non-Christian faiths as Hinduism, Buddhism, and Islam. E
- GSC 310-3 Religious Foundations of Western Civilization.** C
- GSC 311-3 Philosophies and Religions of India.** C
- GSC 312-3 Philosophies and Religions of the Far East.** C
- 320-4 General Logic.** Terms, propositions, and reasoning. Logic as an instrument for the solution of problems in natural and social sciences. C
- 324-4 Symbolic Logic.** Use of symbols as tools for analysis and deduction. Study of truth tables, Boolean Expansions, propositional calculus and quantifiers, logic of relations, and their functions in logistic systems. E
- 340-4 Elementary Ethics and Politics.** Problems of right and wrong for the individual and society. C
- 342-4 Social and Political Theory.** Philosophical analysis of social values and their expression in governmental organization. E
- 355-4 Philosophy of Education.** Survey of theories of education and their relationships to educational policies and practices, as elucidated by the great teachers. Satisfies the education requirement, Education 355.
- 360-4 Philosophy of Art.** The significance of art as a human activity, its nature and standards as seen in the problems of criticism, and the relation of art to other forms of knowledge.
- GSC 360-6 (3,3) Arts and Ideals in Famous Cities.** E
- GSC or GSA 363-6 (3,3) Philosophy of Science.** C
- 381-12 (4,4,4) History of Western Philosophy.** (a) Greek and early Christian. (b) Medieval and early Modern. (c) Recent. Any part may be taken alone. E
- GSC 381-3 Greek Philosophy.** C
- GSC 382-3 Graeco-Roman and Medieval Philosophies.** C
- GSC 383-3 Early Modern Philosophy.** C
- 386-4 American Philosophy.** A survey of American philosophic thought from colonial days to the present, with emphasis on such recent thinkers as Pierce, James, Royce, Dewey, and Santayana. Prerequisites: 381b,c. E
- GSC 386-3 Early American Philosophy.** C
- GSC 387-3 Recent American Philosophy.** C
- 406-4 Philosophy of Biology.** Leading concepts of biological sciences: species, evolution, life, organism and part, etc. Abstract ideas of biology are related, wherever possible, to specific experiments recorded in scientific literature. Prerequisites: 300 or 320, and three laboratory or field courses in the biological sciences or consent of instructor. C
- 415-3 Logic of the Social Sciences.** Logical and epistemological examination of the social studies as types of knowledge. Basic problems in philosophy of science with major emphasis upon social science: relationship of theory to fact, nature of induction, nature of causal law, testability, influence of value judgments, etc. Intended for students with considerable maturity in a social science or in philosophy. C
- 420-4 Advanced Logic.** A careful study of symbolic and discursive systems of logic: Aristotle, Spinoza, Boole, Whitehead, and Johnson. Prerequisites: 320 and consent of instructor. C
- 426-6 (3,3) Mathematical Logic.** (See Mathematics 426.) C
- 428-3 Logic of the Exact Sciences.** Critical study of the technical and philosophical problems associated with formal logic and its uses as a tool for model construction, for formalizations, reconstructions, and as an image of rational thought. Prerequisites: 426-6 or consent of instructor. C
- 441-4 Philosophy of Politics.** (Same as Government 441.) Some of the central problems of modern political life, such as sovereignty, world government, authority and consent, the relations of economics and social studies to political theory. Prerequisite: GSC 102 or 340 or consent of instructor. C
- 443-4 Philosophy of History.** Classical and contemporary reflections on the nature of history and historical knowledge as the basis for dealing with the humanities. Prerequisite: consent of instructor.
- 460-4 Advanced Philosophy of Art.** The definition of art, its relations to science,

culture, and morals; the various types of art defined. Familiarity with at least one of the fine arts is assumed. Prerequisites: GSC 207 or 360, and six courses in music, painting, sculpture, literature, or drama. C

477-4 Latin American Philosophy. A survey of philosophic thought in Latin America from colonial times through nineteenth century positivism and the reactions against it, up to recent trends. Reading of original texts in English translations. Discussions and reports. C

478-4 Seminar in Latin American Thought. (See Spanish 478.) C

481-6 (3,3) 19th Century European Philosophy. (a) Kant, Schopenhauer, and Hegel. (b) Nietzsche, Bergson, the Utilitarians, and latter day idealists. May be taken singly and in any sequence. C

482-3 Recent European Philosophy. Phenomenology. Positivism, Linguistic Analysis, and Existentialism. C

484-12 (4,4,4) History of Western Political Theory. (Same as Government 484.) (a) Ancient and Medieval. (b) Renaissance and Rationalist. (c) Contemporary. Any part may be taken alone. E

487-4 American Political Ideas. An historical study of the political ideas of leading American statesmen and publicists, and their resulting influences upon our government system. E

490-2 to 12 Special Problems. Hours and credits to be arranged. Courses for qualified seniors and graduates who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics for individual study and papers or for group study. Consent of instructor in all cases required.

500-2 to 4 Seminar in Metaphysics. C

501-2 to 4 Seminar in the Philosophy of Religion. C

515-3 Theory of Nature. C

530-2 to 4 Seminar in Theory of Knowledge. C

540-3 Philosophy of Journalism. C

570-3 Seminar in American Idealism. C

581-2 to 4 Seminar in Plato. C

582-2 to 4 Seminar in Aristotle. C

585-3 Seminar in British Empiricism. C

586-2 to 4 Seminar in Spinoza. C

587-3 Seminar in Hegel. C

588-2 to 4 Seminar in Kant. C

589-2 to 12, 590-2 to 12 General Graduate Seminar. C

591-1 to 5 Readings in Philosophy. C

599-2 to 9 Thesis. C

600-3 to 48 Dissertation. C

PHOTOGRAPHY

260-12 (4,4,4) Fundamentals of Still Photography. (a,b,c) Cameras, lighting, and black-and-white film and print processing techniques with emphasis on (a) their application to photography as a communications medium, (b) the view camera and negative and print controls. Studio and darkroom work. (c) Color Photography. A study of the principles of color as related to color photography. Work in making color transparencies, with interior and exterior light. Color negative exposure and an introduction to direct color printing. Must be taken in a,b,c sequence. C

303-4 Portrait Photography. An introduction to posing, lighting, retouching and finishing of portraits. Studio experience. Prerequisite: consent of department. C

309-12 (4,4,4) Commercial and Illustrative Photography. Advanced work in product, architectural, and illustrative photography in black-and-white and color. Prerequisite: 260c. C

341-10 (4,3,3) Cinematography. (a) The fundamentals of cinematography, basic to further work in any kind of cinema production. Includes study of lenses, cameras, films, lighting, exposure, continuity, animation, titles, and editing. (b) Sound motion

picture production. Study of film types. Laboratory consists of production of short sound films with commentary, music, and effects. (c) Production of a lip-synchronous sound film. Must be taken in a,b,c sequence. C

344-1 to 6 Workshop in Cinema Production. Crew work on university film productions. Prerequisite: consent of department. C

345-6 (3,3) History of Photography and Cinematography. (a) History, aesthetics, and appreciation of still photography. (b) History, aesthetics, and appreciation of the cinema. Screenings of films of representative type and historical significance. C

360-8 to 12 (3,3,2-6) Publications Photography. (a) Work in visual news reporting with emphasis on short picture series and picture stories with captions and text. Prerequisite: 260a. (b) Production of picture essays including subject research, layout, captions, and text. Includes study of historic and current picture essays. Prerequisite: 360a. (c) Picture assignments for campus and other publications. Prerequisite: 360a. C

364-3 Picture Editing. Selection, cropping, and layout of pictures for publications. C

370-1 to 10 Workshop in Still Photography. Work on magazine picture assignments and internships. Prerequisite: consent of department. C

390-1 to 6 Problems in Still Photography and Cinematography. C

391-3 Managing the Industrial Photographic Unit. A study of practices, procedures, administration, and management of typical units. C

392-3 Photographic Methods in Science and Technology. Photomicroscopy, specimen photography, infrared and ultra-violet photography, high-speed and time-lapse motion pictures, slide and filmstrip making. C

PHYSICAL EDUCATION

303-5 Kinesiology. Study of joint and muscle action as a basis for the mechanical analysis of human physical movement as executed in daily life and as executed in physical education activities and sports. Prerequisite: Physiology 300. E

305-3 Physical Education for the Atypical Student. Deals with the recognition of physical deviations and with the provisions of special or modified physical education or recreational activities for such students. Prerequisite: 303. E

341-3 Principles of Physical Education. The scientific foundations of physical education based on accepted principles of psychology, physiology, sociology, biology, educational method, philosophy, anatomy, kinesiology and related areas. E

348-3 Camp and Community Leadership. Fundamentals of scouting, camping, and counseling. A weekend camping trip required. E

349-2 Camping Education. Designed to give the potential camp counselor an understanding of the camp; its physical set-up, equipment and necessary routines; its personnel, purpose, traditions, and possibilities. E

350-4 Methods and Materials for Teaching Physical Education Activities in the Elementary School. The organization and conduct of the program, program planning, evaluation of materials, observation and practice in creative rhythms, singing games, folk dancing, and games of low organization. (Required for Elementary education). E

354-3 Organization and Administration of Physical Education and Athletics. The organization and conduct of the total program of physical education including interscholastic athletics based upon accepted educational policies and practices. Emphasis on problems of administration. E

355-2 Techniques of Teaching Swimming. Methods of teaching, analysis of strokes, and the devices for teaching swimming and life saving. Prerequisite: current Senior Lifesaving. E

365-2 Organization and Administration of Community Recreation. The social, economic, and governmental structure of the community; establishing the community recreation program; problems of facilities, equipment, finance, promotion; selecting and supervising personnel; integration with associated programs. E

370-4 Tests and Measurements in Physical Education. Measurement as an aid in determining student needs, curriculum construction, teaching effectiveness, and the attainment of educational objectives. Includes the selection, administration, and interpretation of tests. E

376-3	Emergency Care and Prevention of Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities.	E
402-3	Organization and Administration of Intramural and Extramural Activities.	E
420-4	Physiological Effects of Motor Activity.	E
501-4	Curriculum in Physical Education.	E
502-4	Foundations of Motor Skills.	E
503-4	Seminar in Physical Education.	E
504-4	Problems in Physical Education.	E
509-4	Supervision of Health and Physical Education.	E
525-1-6	Readings in Physical Education.	E

PHYSICAL EDUCATION FOR MEN

100-15	(1 per course) Physical Education Skill Courses for Men. (a) Basic Rhythms I, (b) Folk Dance, (c) Beginning Stunts & Tumbling, (d) Beginning Gymnastics, (e) Personal Fitness, (f) Swimming, (g) Wrestling, (h) Soccer, (i) Beginning Tennis, (j) Indoor Net Games (Badminton & Volleyball), (k) Baseball, (l) Basketball, (m) Football, (n) Beginning Track and Field, (o) Golf.	E
100A-1	Methods of Teaching Swimming. Stresses techniques and methods of teaching applied to individual and group instruction. Basic strokes, underwater swimming, elementary diving, body and breath control, self support, and watermanship. Prerequisite for nonswimmers: audit beginner's swimming course.	C
100B-1	Methods of Teaching Golf. To prepare the student to teach the fundamental aspects of golf, with emphasis on adaptation to varied approaches in teaching.	C
100C-1	Methods of Teaching Tennis. Enables the student to acquire, through practice, the knowledge and skills necessary to teach this activity; includes consideration of desirable teaching materials to enhance instruction.	C
100D-1	Methods of Teaching Individual and Team Activities.	C
100E-1	Methods of Teaching Basic Rhythms.	C
100F-1	Methods of Teaching Exercise.	C
100G-2	Methods of Teaching Football. Individual instruction and practice in all the fundamentals of the game such as passing, kicking, blocking, tackling, running. Emphasis on effective methods of teaching and coaching.	C
100H-2	Methods of Teaching Basketball. Deals with individual and team fundamentals with special emphasis on passing, pivoting, shooting, dribbling, and variety of play patterns concerned with offense and defense. Basic methods of teaching and coaching.	C
100I-2	Methods of Teaching Baseball. Development of the practical skills and ability to teach and coach the techniques of batting, fielding, and playing the various positions in the game.	C
100J-2	Methods of Teaching Track and Field. Students gain practical experience as a foundation for learning the techniques of teaching the running and field events. Emphasis on individual analysis of movement for effective teaching.	C
100K-2	Methods of Teaching Gymnastics. To develop individual techniques in stunts and tumbling, calisthenics, parallel bars, side horses, trampoline, and high bar; fundamental skills, individual and group methods of instruction.	C
100M-2	Methods of Teaching Wrestling. Enables the student to master the fundamental skills of wrestling as well as to teach the individual and group methods of wrestling instruction.	C
101-2	Orientation Practicum in Physical Education. To introduce the student to his professional field, to enable him to secure a concept of the role of physical education in total education, and to crystallize his thinking in relation to vocational objectives. The significant historical aspects of physical education and its role in the broad cultural heritage in order to provide an interpretation and perspective to contemporary issues and developments. Freshman year.	C
170-2	Varsity Football.	C
171-2	Varsity Basketball.	C

- 172-2 Varsity Track. C
- 173-2 Varsity Tennis. C
- 174-2 Varsity Gymnastics. C
- 175-2 Varsity Baseball. C
- 176-2 Varsity Golf. C
- 177-2 Varsity Swimming. C
- 178-2 Varsity Cross Country. C
- 179-2 Varsity Wrestling. C
- 220-1 Recreational Activities and Games (Outdoor). C
- 221-1 Recreational Activities and Games (Indoor). C
- 303-5 Kinesiology. Study of joint and muscle action as a basis for the mechanical analysis of human physical movement executed in daily life and in physical education activities and sports. Prerequisites: Physiology 300. GSA 301. C
- 305-2 Physical Education for the Atypical Student. Deals with the recognition of physical deviations from the normal student and with the provisions of special or modified physical education or recreational activities for such students. Prerequisites: Physiology 300 and GSA 301. C
- 306-1 Advanced Stunts and Tumbling. C
- 307-1 Advanced Apparatus. C
- 317-1 Life Saving and Water Safety. C
- 330A-2 Theory of Basketball Coaching. Different types of offense and defense studied; special emphasis given to early season conditioning and practice, offensive and defensive drills, team strategy, rules of the game. Prerequisite: 100H. C
- 330B-2 Theory of Football Coaching. Deals with all phases of the game; offensive and defensive formation analyzed; strengths and weaknesses of each studied; various types of individual plays analyzed; rules discussed. Prerequisite: 100G. C
- 331A-2 Theory of Swimming Coaching. Treatment of foundations and principles underlying coaching methods; comparative study differences in prevailing theories and methods; development of programs of training in pre-season, mid-season, and post-season of competition. Prerequisite: 100A. C
- 331B-2 Theory of Baseball Coaching. A study of the strategy of the game; the conduct of daily practice; analysis of the rules and their application to play situations. Also effective methods of coaching for best results. Prerequisite: 100I. C
- 331C-2 Theory of Track and Field Coaching. Theoretical concepts dealing with the effective performance in running and field events; special emphasis on methods of training for such events; methods of organizing and conducting track and field meets. Prerequisite: 100J. C
- 331D-2 Theory of Wrestling Coaching. Prepares students to develop program of wrestling; includes comparative knowledge of problems, techniques, materials, and systems in coaching wrestling as well as the organization and administration of the wrestling program. Prerequisite: 100M. C
- 331E-2 Theory of Tennis Coaching. Theory of advanced strokes, strategy and tactics, scheduling and conducting matches, tournaments, exhibitions and clinics; officiating; organizing and promoting development programs. Prerequisite: 100C. C
- 331F-2 Theory of Gymnastic Coaching. Deals with all phases of gymnastics; organization of dual meets, championships, and exhibitional teams; practice schedules; care and purchase of equipment; development and evaluation of exercises and routines; techniques of judging. Prerequisite: 100K. C
- 335-2 Administration of Aquatics. The organization, administration, and supervision of aquatic programs in institutional and community swimming pools and camp waterfronts; the construction, operation, and maintenance of pools and waterfronts; personnel and program problems. C
- 341-3 Principles of Physical Education. An understanding of the scientific foundations of physical education as implied by the accepted principles of psychology, physiology, sociology, biology, educational method of philosophy, anatomy, kinesiology, and related areas. Senior year. C
- 345-1 to 3 Officiating Technique. E
- 345A-1 Officiating of Fall Sports. Interpretation of rules in football, cross country,

and soccer; techniques of officiating; code of ethics, for officials and players; problems of officiating. Officiating practice required.

345B-1 Officiating of Winter Sports. Interpretation of rules in basketball, wrestling, and swimming; techniques of officiating; code of ethics for officials and players; problems of officiating. Officiating practice required.

345C-1 Officiating of Spring Sports. Interpretation of rules in baseball, track and field, tennis and golf; techniques of officiating; code of ethics for officials and players; problems of officiating. Officiating practice required.

350-3 Methods and Materials for Teaching Physical Education Activities in the Elementary School. The organization and conduct of the program with special emphasis on program planning, evaluation of materials, observation and practice in creative rhythms, singing games, folk dancing, and games of low organization. 2 hours lecture; 2 hours laboratory. C

354-3 Organization and Administration of Physical Education and Athletics. The organization and conduct of the total program of physical education including inter-scholastic athletics based upon accepted educational policies and practices. Emphasis on problems of administration. C

355-2 Assisting Techniques. C

365-2 to 4 The Organization and Administration of Community Recreation. The social, economic, and governmental structure of the community; establishing the community recreation program; problems of facilities; equipment, finance, promotion; selecting and supervising personnel integration with associated programs. C

370-3 to 4 Tests and Measurements in Physical Education. Measurements as an aid in determining student needs, curriculum construction, teaching effectiveness, and the attainment of educational objectives. Includes the selection, administration, and interpretation of tests. 3 hours lecture; 2 hours laboratory. C

376-3 Care and Prevention of Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities. 2 hours lecture; 2 hours laboratory. Prerequisite: Physiology 300 and GSA 301. C

377-1 Horseback Riding. C

378-1 Canoeing and Boating. C

381-4 Theory of Coaching. Principles underlying participation in competitive inter-scholastic athletics; theory of coaching sports; technique; strategy; organization and administration of programs. E

400-4 Evaluation in Physical Education. Historical background of measurement in physical education; selection and evaluation of contemporary testing devices; structure and use of tests; administering the testing program; and interpretation and application of results. Fulfills the tests and measurements course requirements for the Master of Science degree. C

402-3 Organization and Administration of Intramural and Extramural Activities. Planning intramural programs of sports; planning and co-ordinating extramural activities commonly associated with physical education. C

403-4 The Adaptation of Physical and Recreational Activities to the Handicapped Individual. Recognition of postural deviations; devising and planning programs for the physically atypical. C

404-4 The Teaching of Sports. Teaching methods, officiating, organization, safety precautions, and selecting equipment for sports. C

405-4 Current Theories and Practices in the Teaching of Dance. History and evolution of dance; place of dance in education. C

406-4 Basic Concepts of Physical Education. The place of physical education in the school program, and the concepts underlying the program. (Required of all students not presenting the undergraduate courses 354 or 340.) C

407-4 Scientific Basis of Athletic Training.

408-2 to 4 Workshop: Physical Fitness—Its Role and Application in Education. Improvement of programs and teaching techniques involved in the development of various aspects of physical fitness. Units on postural status; body weight control; tension factors, causes, and control; exercise tolerance; and general body mechanics and control. C

420-4 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: Physiology 209 or equivalent.	
475-2 to 4 Individual Research.	
500-4 Techniques of Research.	C
501-4 Curriculum in Physical Education.	C
502-4 Foundations of Motor Skills.	C
503-4 Seminar in Physical Education.	C
504-4 Problems in Physical Education.	C
507-4 Scientific Basis of Athletic Training.	C
508-3 Administration of Interschool Athletics.	C
509-4 Supervision of Physical Education.	
510-4 (2,2) Motor Development.	C
511-2 Analysis of Human Physical Movement.	C
525-1 to 6 Readings in Physical Education.	
599-3 to 9 Thesis.	C
600-2 to 48 Dissertation.	C

PHYSICAL EDUCATION FOR WOMEN

Basic Movement: 113.
 Team Sports: 114, 224, 244.
 Aquatics: 211, 271, 316, 317, 378.
 Individual Sports: 216, 218, 228, 229, 328, 377.
 Dance: 212, 222, 242, 272, 374, 376.
 Officiating: 311.
 Teaching Physical Education in Elementary School: 319, 350.
 Teaching Physical Education in Secondary School: 301, 304, 360, 361, 362, 363.
 Camping: 348.
 Professional Courses: 303, 308, 351, 352, 353, 354, 355, 370.

025-0 Orientation.	E
100-25 (1 per course) Physical Education Skill Courses for Women. (a) Basic Rhythms, (b) Folk Dance, (c) Field Hockey, (d) Soccer & Speedball, (e) Swimming, (f) Tennis, (g) Basketball, (h) Intermediate Modern Dance, (i) Softball, (j) Volleyball, (k) Stunts & Tumbling, (l) Physical Conditioning, (m) Track & Field, (n) Badminton, (o) Archery, (p) Golf, (q) Life Saving, (r) Bowling, (s) Apparatus Activities, (t) Social Dance, (u) Square Dance, (v) Recreational Sports, (w) Fencing, (x) Diving, (y) Horseback riding.	E
113-1 Fundamentals of Body Movement.	C
114-1 Speedball. Techniques and team tactics.	C
211-1 Intermediate Swimming. Prerequisite: pass beginning swimming test.	C
212-1 Beginning Contemporary Dance. Fundamentals of movement and composition. A basic course leading to the creating of contemporary dance composition.	C
216-1 Archery.	C
218-1 Intermediate Fencing.	C
222-1 Folk Dancing.	C
224-1 Basketball.	C
228-1 Tennis.	C
229-1 Intermediate Golf.	C
242-1 Square and Social Dance.	C
244-1 Hockey.	C
271-1 Sailing.	C
272-1 Tap Dance.	C
273-1 to 6 Dance Workshop.	
301-2 Techniques of Teaching Recreational Sports. Analysis and methods of teaching badminton, deck tennis, volleytennis, table tennis, and other recreational sports.	C
303-5 Kinesiology. The mechanical analysis of physical education activities through the study of joint and muscle action. Prerequisite: Anatomy.	C

- 304-10 (2,2,2,2,2) Techniques of Teaching Sports.** Methods of teaching, construction of daily lesson plans, and analysis of techniques. (a) soccer and volleyball, (b) hockey and speedball, (c) basketball, (d) tumbling, stunts, and gymnastics, (e) softball and tennis. Assistantship required during a,b,c,d, and e. C
- 308-5 Methods of Teaching Dance.** A course dealing with each of the various types of dance, including fundamental progressions, and composition in each type. Prerequisites: 212, 222 or equivalent. C
- 311-2 (1,1) Theory of Officiating Basketball.** Study of requirements of a nationally-rated official as set up by the Division of Girls' and Women's Sports. C
- 316-1 Advanced Swimming.** C
- 317-1 Life Saving and Water Safety.** Techniques of Red Cross Life Saving and Water Safety. Prerequisite: pass intermediate swimming test. C
- 319-4 Teaching Elementary School Group Activities.** Study of age characteristics; planning of an activity program for all grade levels; techniques of teaching activities for elementary grades; fulfillment of the Illinois requirements for elementary school teachers. Prerequisite: Psychology 301 or Guidance 305. C
- 321-6 (2-6) Methods of Teaching in Physical Education for Women.** (a) Team sports, (b) Dance, (c) Individual sports. Prerequisite: consent of instructor or adviser. E
- 323-3 (1,1,1) Officiating Techniques.** Study of rules and their interpretation; requirements for ratings given by the United States Field Hockey Association and the Division for Girls' and Women's Sports. Officiating practice required. (a) Fall: field hockey and soccer. (b) Winter: basketball. (c) Spring: volleyball and softball. E
- 328-1 Intermediate Tennis.** C
- 348-2 to 4 Camp and Community Leadership.** Fundamentals of scouting, camping, and counseling. A weekend camping trip required. C
- 350-5 Materials and Methods in Elementary Schools.** For supervisors and teachers of physical education. Curriculum planning based on grade characteristics and educational philosophy, presentation of skills including skill tests, lead-up games, stunts and tumbling, games of low organization, creative rhythms, singing games, and folk dance.
- 351-4 Recreation and Physical Education for Atypical Handicapped Individuals.** Techniques of physical examination; postural defects and their correction; activities suitable for the atypical; program building; and correlation of this program with the physical education curriculum. C
- 352-2 History of Physical Education.** A study of the background and development of physical education.
- 353-4 Organization and Administration of Physical Education.** Criteria for the selection of activities; the organization of classes, the policies and the personnel; the physical plant and its upkeep; the planning, utilization, and care of equipment in the physical education program. C
- 354-2 Principles of Physical Education.** The scientific foundations applied to physical education. C
- 355-3 Techniques of Teaching Swimming.** Methods of teaching, analysis of strokes, and devices for teaching swimming and life saving. Prerequisite: 211 or equivalent. C
- 360-4 The Physical Education Program for Girls in Junior and Senior High Schools.** Program planning, source materials, and selected physical activities. C
- 361-1 to 4 The Teaching of Team Sports and Dance to Junior and Senior High School Girls.** Techniques of teaching volleyball, basketball, soccer, and dance. C
- 362-1 to 4 Teaching Basic Activities to Junior and Senior High School Girls.** Teaching badminton, softball, basic movement, and recreational games. C
- 363-1 to 4 Teaching a Sports Program for High School Girls (workshop).** Designed for teachers in service who have provisional certificates. C
- 370-3 to 4 Tests and Measurements in Physical Education.** The theory of measurement in health and physical education, the selection and administration of appropriate tests, and the interpretation of results. Projects required. C
- 374-1 Advanced Folk Dance.** C
- 376-1 Pre-Classic Dance Forms.** Prerequisite: 212 or consent of instructor. C

- 377-1 **Horseback Riding** (fee required). C
- 378-1 **Canoeing and Boating**. Prerequisite: pass swimming test (fee required). C
- 400-4 **Evaluation in Physical Education**. Historical background of measurement in physical education; selection and evaluation of contemporary testing devices; structure and use of tests; administering the testing program; and interpretation and application of results. Fulfills the tests and measurements course requirements for the Master of Science degree. C
- 402-3 **Organization and Administration of Intramural and Extramural Activities**. Planning intramural programs of sports; planning and co-ordinating extramural activities commonly associated with physical education. C
- 403-4 **The Adaptation of Physical and Recreational Activities to the Handicapped Individual**. Recognition of postural deviations; devising and planning programs for the physically atypical. C
- 404-4 **The Teaching of Sports**. Teaching methods, officiating, organization, safety precautions, and selecting equipment for sports. C
- 405-4 **Current Theories and Practices in the Teaching of Dance**. History and evolution of dance; place of dance in education. C
- 406-4 **Basic Concepts of Physical Education**. The place of physical education in the school program, and the concepts underlying the program. (Required of all students not presenting the undergraduate courses 354 or 340.) C
- 407-4 **Scientific Basis of Athletic Training**. C
- 408-2 to 4 **Workshop: Physical Fitness—Its Role and Application in Education**. Improvement of programs and teaching techniques involved in the development of various aspects of physical fitness. Units on postural status; body weight control; tension factors, causes, and control; exercise tolerance; and general body mechanics and control. C
- 420-4 (C); 420-3 (E) **Physiologic Effects of Motor Activity**. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: Physiology 209 or equivalent. C
- 475-2 to 4 **Individual Research**. The selection investigation and writing of a research topic under supervision of an instructor. (a) dance, (b) kinesiology, (c) measurement, (d) motor development, (e) physiology of exercise, and (f) history and philosophy. C
- 500-4 **Techniques of Research**. C
- 501-4 **Curriculum in Physical Education**. C
- 502-4 **Foundations of Motor Skills**. C
- 503-4 **Seminar in Physical Education**. C
- 504-4 **Problems in Physical Education**. C
- 507-4 **Scientific Basis of Athletic Training**. C
- 508-3 **Administration of Interschool Athletics**. C
- 509-4 **Supervision of Physical Education**. C
- 510-4 (2,2) **Motor Development**. C
- 511-2 **Analysis of Human Physical Movement**. C
- 525-1 to 6 **Readings in Physical Education**. C
- 599-3 to 9 **Thesis**. C
- 600-2 to 48 **Dissertation**. C

PHYSICS

- 206-15 (5,5,5) **College Physics**. Designed to meet premedical requirements and the needs of all students majoring in one of the sciences, except physics. Laboratory. Must be taken in a,b,c or a,c,b sequence. Prerequisite: GSD 114c. C
- 211-15 (5,5,5) **University Physics**. Primarily for students with a concentration in physics and pre-engineers. Laboratory. Must be taken in a,b,c or a,c,b sequence. Prerequisite: Mathematics 150b (or concurrent enrollment). C
- 211-15 (5,5,5) **University Physics**. A basic course for science, mathematics, and pre-engineering students. (a) Mechanics, (b) Light, sound, and heat, (c) Electricity

and magnetism. Three lecture, two recitation, and two laboratory hours per week. Must be taken in a,b,c or a,c,b sequence. Prerequisite: (a) Mathematics 150b or concurrent enrollment; (b,c) 211a, Mathematics 252a or concurrent enrollment. **E**

300-5 University Physics IV. A continuation of 211 covering modern physics. Three lecture, two recitation and two laboratory hours per week. Prerequisite: 206 or 211C, Mathematics 252b or concurrent enrollment.

301-8 (4,4) Mechanics. Intermediate theoretical mechanics, using vector analysis: kinematics, particle dynamics, rigid body mechanics, oscillations, wave motion, and advanced principles. Prerequisites: 206a or 211a, Mathematics 305a, or concurrent enrollment, or consent of instructor. **C**

301-8 (4,4) Mechanics. Intermediate mechanics using vector analysis. Prerequisite: 211a; Mathematics 324 or concurrent enrollment. **E**

304-3 Thermodynamics. Survey of laws of classical thermodynamics. Their constituents in application to some simple thermodynamic systems; phase equilibrium and theory of phase transitions. Prerequisites: 206 or 211, Mathematics 252b. **C**

304-3 Thermodynamics. A macroscopic study of the thermal properties of matter and the laws of thermodynamics. Prerequisite: 211b and Mathematics 252b. **E**

305-10 (5,5) Introduction to Electric Theory. Vector treatment of the theory, with laboratory; electrostatics in vacua and in matter, steady currents, magnetism, alternating currents, complex number analysis of a-c circuits, electromagnetic radiation. Prerequisites: 206 or 211; Mathematics 305a, or concurrent enrollment, or consent of instructor. **C**

305-8 (4,4) Introduction to Electric Theory. Vector treatment of the theory: electrostatics in vacuum and in matter, steady currents, magnetism, alternating currents, complex number analysis of a-c circuits, electromagnetic radiation. Must be taken in a,b sequence. Prerequisite: 211c and Mathematics 324. **E**

307-2 Electric Measurements. A laboratory course illustrating basic electrical and magnetic properties and emphasizing precision in their measurement. Prerequisite: 305b or concurrent enrollment. **E**

309-4 Electric Circuits. Electron tube and transistor circuit principles and applications. Three lecture and three laboratory hours per week. Prerequisite: 211c. **E**

310-5 Light. A study of light propagation and optical instruments; interference, diffraction and polarization of light. Laboratory. Prerequisite: 206b or 211b. **C**

310-4 Light. Light propagation and optical instruments: reflection, refraction, interference, diffraction, and polarization of light. Prerequisite: 211b. **E**

311-1 Optics Laboratory. Advanced experiments in geometrical and physical optics. Two laboratory hours per week. Prerequisite: 310 or concurrent enrollment. **E**

312-5 Radio. A study of radio receivers and transmitters. Laboratory. Prerequisite: 206 or 211. **C**

316-5 History of Physics. The development of physical concepts and theories and of contemporary physical research. Designed particularly for students planning to teach. **E**

375-0 to 6 Seminar. Topics selected from a wide range of physical theories and applications (maximum credit per quarter 2 hours). Prerequisite: consent of instructor. Junior or senior standing recommended. **E**

404-3 Introduction to Statistical Mechanics. A brief treatment of the kinetic theory of gases; introduction of phase spaces and ensemble theory. Shows the connection between mechanical and thermodynamic concepts and obtains a statistical interpretation of thermodynamic processes. Prerequisites: 301, 304 or consent of instructor.

405-5 Electronics. The physics of vacuum tubes and semiconductor devices. Elementary theory and application of vacuum tubes as circuit elements in power supplies, oscillators, amplifiers, and shaping circuits. Laboratory. Prerequisites: 305; Mathematics 305a or consent of instructor. **C**

410-5 Physical Optics. A theoretical and experimental study of light as electromagnetic energy; its production, detection, and measurement. Laboratory. Prerequisites: Mathematics 252b and three advanced physics courses. **C**

413-8 (4,4) Atomic Physics. A general survey of modern physics including relativity

theory, quantum theory, atomic structure and spectra, and wave mechanics. Prerequisites: 301, 305; Mathematics 305a or consent of instructor. C

414-5 Nuclear Physics. Basic properties of nuclei, systematics of nuclear stability, radioactive decay; alpha, beta, and gamma ray spectroscopy, nuclear reactions, models of the nucleus, neutron physics and elementary particles. Prerequisite: 413. C

415-12 (4,4,4) Modern Physics. Elements of wave mechanics, atomic and nuclear physics, fundamental particles, and relativity. Must be taken in a,b,c sequence. Prerequisite: 300; 9 hours of mathematics numbered 300 or above. E

418-1 to 4 Modern Physics Laboratory. E

420-2 to 5 Special Projects. Each student is assigned to a definite investigative topic. Adapted to advanced undergraduate students. Prerequisites: 301, 305.

425-5 Electrical Phenomena in Gases. Excitation and ionization of gas atoms; diffusion of ions; space charge; glow and arc discharges. Prerequisite: 305. C

430-2 Physical Literature. A study of source materials in the field of physics. Also library search on special subjects. Prerequisite: integral calculus, three advanced physics courses, and one year of foreign language. E

435-3 Plasma Physics. Basic equations and conservation laws; first order orbit theory with applications to static and dynamic problems; small amplitude plasma waves; hydromagnetic shocks; collision effects; diffusion across a magnetic field; stability; coupling of plasmas and radiation. Prerequisite: 305a,b. E

445-8 (4,4) X-Ray Crystallography. (a) Symmetry elements, development of space groups, reciprocal space, geometrical theory of diffraction, determination of lattice parameters, Fourier representations of periodic structure. (b) Production of x-rays, kinematical theory of x-ray diffraction, diffraction techniques, factors affecting the intensity of reflections, extinction contrast methods, introduction to the dynamical theory. Must be taken in a,b sequence. Prerequisite: 300. E

450-5 (C); 450-3 (E) Introduction to Solid-State Physics. A study of the fundamentals of solid-state physics including classification of solids, interatomic and intermolecular forces, lattice energies, specific heats, lattice dynamics, free electron theory of metals, lattice defects, color centers, luminescence, magnetic materials, radiation damage, transport in ionic crystals. Fermi-Dirac statistics, Fermi distribution, and semiconductors. Prerequisites: 305, 413 or 415a; 304 or consent of instructor.

501-15 (3,3,3,3,3) Methods of Theoretical Physics.

510-9 (3,3,3) Classical Mechanics. E

511-12 (4,4,4) Mathematical Methods of Physics. C

520-2 to 5 Special Projects. C

530-9 (3,3,3) Electromagnetic Theory. E

531-9 (3,3,3) Quantum Mechanics.

540-3 Nuclear Physics. E

555-6 (3,3) Materials Structure Analysis. C

560-3 Statistical Mechanics. E

570-3 Solid State Physics. E

575-1 to 4 Graduate Seminar. E

580-3 to 6 Selected Topics in Physics. E

590-1 to 9 Thesis. C

590-1 to 9 Research in Physics (Thesis). E

PHYSIOLOGY

200-3 Occupational Therapy Orientation. A survey and history of the field. The uses, techniques and philosophies of occupational therapy and its role in the treatment of disease and in rehabilitation. Three hours lecture per week. C

209-4 Principles of Physiology. A comprehensive introductory analysis of the functional machinery of the human body. Three lectures and two laboratory hours per week. Prerequisite: Zoology 103 or Physiology 300. No credit toward a concentration in zoology. E

215-3 Introduction to Pharmacology. Use and action of drugs on the human body. Primarily for nurses. Three hours lecture per week. C

300-4 to 5 Human Anatomy. Lectures, demonstrations, and periodic observation of the prosected body. Lectures confined to bones, joints, muscles, and nerves. Primarily for majors in physical education. Four hours lecture per week. One section, 300N, is reserved chiefly for nursing students. All bodily systems are reviewed. A three-hour laboratory is substituted for one of the lectures. C

300-4 Human Anatomy. The anatomy of the principal systems of the human body. Three lectures and two laboratory hours per week. Prerequisite: GSA 201b, or zoology 103. No credit toward a concentration in zoology. E

GSA 301-4 Principles of Physiology. C

GSA 302-3 Psychobiological Foundations of Behavior. C

315-15 (5,5,5) Advanced College Physiology. Lectures emphasize mammalian and human physiology whereas the laboratory involves function throughout the vertebrate classes. (a) Blood, circulation, and respiration; (b) digestion, excretion, and endocrines; (c) muscles, nervous system, and sense organs. 3 hours lecture and 4 hours laboratory per week. Prerequisite: GSA 201c and 5 hours of chemistry. C

315-15 (5,5,5) College Physiology. Lectures emphasize mammalian and human physiology. Laboratory involves function throughout the vertebrate classes. Must be taken in a,b,c or a,c,b sequence. Three lecture and four laboratory hours per week. Prerequisites: GSA 201b or zoology 103, and 5 hours of chemistry. E

410-15 (5,5,5) Advanced Anatomy. Dissection of the human body. Primarily for students with a concentration in physiology and other biological sciences. Not a premedical course. 2 hours lecture, 6 hours laboratory. C

414-4 Anatomy and Physiology of Speech and Hearing Mechanisms. The anatomy and physiology of the vocal apparatus. Primarily for students with a concentration in speech pathology. 3 hours lecture, 2 hours laboratory. C

415-8 (4,4) Experimental Animal Surgery. Preparation of animals for surgery. Anesthesia, instruments, care of animal quarters, selected exercises. 2 hours lecture, 4 hours laboratory. Part b may be elected independently of a, only by consent of the chairman. C

417-6 (3,3) Principles of Pharmacology. Action of drugs and other chemical substances upon the living organism. Physiological and biochemical events resulting from the action of drugs. Pharmacodynamics, chemo-therapy, toxicology, and therapeutics. Prerequisites: basic courses in chemistry and biological sciences. 2 hours lecture, 2 hours laboratory. C

430-12 (4,4,4) Cellular Physiology. The nature and mechanism of the living cell. Chemical and physical aspects of vital activity. Required for graduate majors in physiology. Recommended for students interested in biochemistry and biophysics. 3 hours lecture, 2 hours laboratory.

433-4 Comparative Physiology. Fundamental physiological processes and the manner in which they vary in various groups of animals. Recommended for a concentration in physiology and for students in other biological sciences. 2 hours lecture, 2 hours laboratory.

440-3 Electron Microscopy. Lectures, demonstrations, and practical experience with the electron microscope. Fundamentals of specimen preparation. Open to students with advanced knowledge of any natural or physical sciences. 2 hours lecture, 2 hours laboratory. C

450-4 to 16 Special Problems in Physiology. Selected problems in various aspects of physiology. 8 hours laboratory. Open only by permission. C

455-2 Physiological Problems in Rehabilitation. Designed specifically for the rehabilitation counseling program. Problems of the handicapped. 2 hours lecture. C

460-12 (4,4,4) Mammalian Physiology. Function and biochemical organization in mammals, especially man. Open to students with adequate courses in biological sciences and chemistry. (a) blood, circulation, respiration. (b) digestion, excretion, endocrines. (c) nervous system sense organs. 3 hours lecture, 4 hours laboratory.

500-1 to 9 Advanced Seminar. C

519-3 Experimental Pharmacology. C

520-9 (3,3,3) Physiological Technics. C

521-1 to 6 Readings in Current Physiological Literature. C

550-3 Radiation Biology.	C
599-3 to 9 Thesis.	C
600-4 to 36 Doctoral Dissertation.	C

PLAN A

151-12 (3,3,3,3) Honors Seminar.	C
251-12 (3,3,3,3) Honors Seminar.	C
351-9 (3,3,3) Honors Seminar.	C
391-9 (3,3,3) Honors Seminar.	C

PLANT INDUSTRIES

103-4 Introductory Study of Soils. An introduction to soils and fertilizers, to their role in crop production, and to their management and conservation. Prerequisite: high school chemistry or consent of instructor.	C
264-4 General Horticulture. General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Field trip. Seniors cannot enroll without consent of department.	C
301-4 Soil Science for Foresters. Basic concepts of soil formation, classification, characteristics, fertilization, and management as they apply to the growth of trees. Field trips. Prerequisite: one course in chemistry and a major in forestry.	C
302-3 to 4 Advanced Soil Science. Basic principles of soil physics, chemistry and fertility as they relate to plant production. Prerequisite: 103 or 301.	C
304-3 Landscape Gardening. Land selection, landscape design and development for home, farm, and public sites with regard to area adaptation. Field trips.	C
306-5 (3,2) Soil and Water Conservation. (Same as Agricultural Industries 306.) (a) The study of the theoretical factors affecting soil erosion and excessive water run-off, including practices of water management and soil conservation. Prerequisite: one course in soils. (b) Laboratory. Practical structure methods of controlling water run-off and soil erosion. Prerequisite: 306a or concurrent enrollment.	C
309-4 Field Crop Production. Principles of growth and production of common field crops: cereals, forages, and miscellaneous crops; growth characteristics; adaptation; improvement; culture; diseases and insects and their control; utilization. Field trip. Prerequisite: GSA 201b.	C
315-4 Plant Genetics. (See Botany 315.)	C
316-4 Small Fruits. Production of strawberries, brambles, grapes, and miscellaneous small fruits. Field trips. Prerequisite: GSA 201c or concurrent enrollment or consent of department.	C
317-4 Insect Pests and Their Control. (See Zoology 316.)	C
324-4 Orchardring. Commercial tree fruit growing, physiology, orchard practices, pest control, harvesting, and marketing. Field trips. Prerequisites: 264, GSA 201c or concurrent enrollment.	C
334-4 Preservation and Processing of Agricultural Produce.	
340-4 Commercial Vegetable Production. Culture, harvesting, and marketing of commercial vegetables. Field trips. Prerequisites: 264, GSA 201c.	C
344-4 General Floriculture. Propagation, culture, and uses of flowering plants in the home and garden. Field trips. Prerequisite: GSA 201c.	C
355-5 Plant Pathology.	
381-1 to 2 Agricultural Seminar. (Same as Agricultural Industries 381, Animal Industries 381, and Forestry 381.) Discussion of problems in agriculture. Limited to senior students.	C
390-1 to 6 Special Studies in Plant Industries. Assignments involving research and individual problems. Prerequisite: consent of chairman.	C
401-4 Soil Physics. Physical properties of the soil; factors affecting them, their measurements, evaluation, and influence in determination of soil productivity. Prerequisite: 103 or 301.	C
402-4 Soil Morphology and Classification. Morphology and soil formation, descrip-	

tion and identification of soil profiles, classification of soils, techniques of soil mapping, and interpretation of survey data. Field trips. Prerequisite: 103 or 301. C

404-3 Turf Management. Principles and methods of establishing and maintaining turf for homes, recreational areas, and public grounds. Study of basic plant and soil materials, fertility, culture, water management, and pest control as related to turf-grasses in variable environments. Field trips. Prerequisite: GSA 201c or equivalent; course in soils recommended. C

406-4 Radioisotopes, Principles and Practices. Basic characteristics of radioactive materials and detection systems. Application of radioisotope technology to biologically related sciences, such as agriculture; includes requisite health physics safety practices. Prerequisite: Biochemistry, or physiology, or consent of department. C

407-5 (3,2) Fertilizers and Soil Fertility. (a) Lecture. The uses of fertilizer material; effects of various fertilizers on soils and crops; fertility maintenance and soil management. Prerequisite: one course in soils. (b) Laboratory. The laboratory study of the chemistry and fertility of soils. Parallels the theoretical presentation given in 407a. Prerequisite: 407a or concurrent enrollment. C

408-4 World Crop Production. Ecological and physiological considerations used in the interpretation of crop research data, with emphasis on modern developments and trends in production and research of major agronomic crops. Prerequisite: 309. C

418-4 Weeds and Their Control. Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction. Mechanical, biological, and chemical control of weeds. State and federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field trips. Prerequisite: GSA 201c or concurrent enrollment. C

419-4 Forage Crop Management. Forage crop production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation, and land use. Prerequisite: GSA 309. C

424-5 (3,2) Soil Microbiology. (a) Lecture. A study of the numbers, characteristics, and biochemical activities of soil micro-organisms, with particular consideration of their role in the transformations of organic matter, nitrogen, and minerals as related to soil fertility and management. Prerequisite: one course in Microbiology or soils. (b) Laboratory. Experiments designed to determine numbers, and to study the characteristics and biochemical activities of the soil microflora as related to fertility. Prerequisites: 424a, or concurrent enrollment, Microbiology 301. C

438-3 Advanced Vegetable Crops. Studies of the genetic, morphological, and physiological factors influencing the production of vegetable crops. Prerequisites: 264, Botany 320, or consent of instructor. C

440-3 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Prerequisites: 264, GSA 201b or consent of department. C

455-5 Plant Pathology. (See Botany 456.) C

456c,e-4 (2,2) Agricultural Marketing Problems and Practices. (See Agricultural Industries 456c,e). C

506-2 Laboratory Methods for Radioisotopes. C

507-3 Advanced Soil Fertility. C

520-1 to 6 Readings. C

575-1 to 6 Research. C

581-1 to 6 Seminar. C

599-2 to 9 Thesis. C

PRINTING

217-4 General Typography. (Same as Industrial Education 217.) Screen and block typography, foundry type, type classifications, use of job cases, hand typesetting, proof-pulling, and introduction to layout, use of illustrations, and cold-type composition. C

259-3 to 30 Printing Skills. A variable-credit course into which students from other

institutions and the Southern Illinois University Vocational-Technical Institute may transfer credit for courses in printing. C

265-4 Machine Composition. (Same as Journalism 265.) Elementary hot-type keyboard practice; progressive exercises, adjustments, and maintenance. Study of cold type methods. Prerequisite: 217. C

271-7 (4,3) Presswork. Introduction to platen press operation, imposition and lockup, preparation of the press, feeders, cylinder presses, and automatic presses. Principles of presswork management. Must be taken in a,b sequence. C

302-3 Advanced General Typography. Advanced work in copy preparation, copy fitting, and layout problems. C

308-7 (4,3) Photolithography. Theory and practice of layout, copy preparation, photography, stripping, plate making and presswork for offset lithography. Must be taken in a,b sequence. Prerequisite: 271a. C

312-3 Paper. Historical background, materials and methods used in today's modern mills; sources and method of distribution; classification of printing papers—grades, weights, sizes, and quantities; selection to meet end-use specifications; trade customs; testing and quality evaluation; calculating requirements and cost determination. Prerequisite: 271b. C

314-3 Bindery. Practical use of bindery equipment. Survey of bindery and finishing operations as they pertain to sheet work, pamphlet binding, case-bound and edition book binding. Equipment common to all types of binding is studied as well as special purpose manual and automatic facilities. C

365-3 Printing Operation Analysis. Classification of printed matter by format and design for end-use purposes; determination of materials used and operations performed; comparative evaluation with respect to other processes, methods and facilities. Prerequisite: 312. C

366-3 Printing Cost Analysis. Study of pricing methods and practices showing the allocation of materials and labor costs; application of cost accounting methods in the determination of actual vs. budgeted hour cost rates; distribution of administrative and manufacturing expenses; record keeping and the application and use of data processing equipment. Prerequisite: 365 and Accounting 250. C

379-9 (3,3,3) Printing Production. Study of all aspects of printing production and plant operation. Functions and responsibilities of general management. Marketing, advertising, and selling techniques. Financial management with its attendant records and controls. Manufacturing practices, including organization, facilities, plant layout, production and quality control, procurement, warehousing and inventory. Industrial relations, including a survey of the jurisdiction, aims, and policies of the printing and related graphic arts trade unions. Must be taken in a,b,c sequence. Prerequisite: 365. May be taken concurrently with 381a,b. C

381-8 (4,4) Estimating. A comprehensive study of estimating methods with extensive practice in the preparation of letterpress and offset printing cost forecasts as the basis for selling and production control. Duties and responsibilities of the estimator. Sources of production data, industry standards and performance records. Use of time and motion studies. Must be taken in a,b sequence. Prerequisite: 365. C

384-3 Seminar in Printing Management. Subjects relating to some phase of printing plant operation, management problems or new graphic arts developments are assigned for original research and study. A comprehensive term report is required after periodic progress reports have been subjected to class discussion. Prerequisite: 379b. C

PSYCHOLOGY

211-8 (4,4) Principles and Methods of Psychology. An introduction to the experimental methods utilized in the study of behavior. (a) The application of methods to the study of sensation, perception, and learning, (b) the analysis and interpretation of psychological data. Lecture and laboratory. Prerequisite: GSB 201c.

301-4 Child Psychology. A study of the biological and psychological development of the child from birth through puberty, and of relevant research methods and results. Prerequisite: GSB 201c.

GSA 302-3 Psychobiological Foundations of Behavior.

C

303-4 Adolescent Psychology. Examines the physical and psychological development of the adolescent, and the relevance of childhood development to adolescent problems. Prerequisite: GSB 201c.

304-4 Psychology of Maturity and Old Age. A consideration of psychological factors in later maturity and old age and their concomitant problems, both individual and societal. Prerequisite: GSB 201c.

305-4 Psychology of Personality. A study of the inferred patterns underlying an individual's unique reactions to his environment. Investigates the motivations, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: GSB 201c.

C

305-4 Personality Dynamics. Exploration of human motivations, personality patterns, and ways of coping with the stresses of modern life. Prerequisite: GSB 201c.

E

307-4 Social Psychology. Introduction to the study of the individual's interaction with his social environment. Considers problems of social learning, attitude formation, communication, social influence processes and group behavior. Prerequisite: GSB 201c.

311-4 Experimental Psychology: Learning. Investigates the processes governing behavioral change. Experimental studies of conditioning, memory, and forgetting will be emphasized. Laboratory work will include the design and conduct of experiments with humans and animals. Lecture and laboratory. Prerequisite: 211a, and 211b.

312-4 Experimental Psychology: Perception. Investigates the variables influencing an organism's stimulation by his environment. The structure and operation of the sense organs as well as complex perceptual phenomena are examined in lectures and laboratory. Prerequisite: 211a and 211b.

313-4 Experimental Psychology: Motivation. An examination of both biological and social variables influencing the activation, direction, and maintenance of behavior. Laboratory work will examine the effects of motivation upon behavior. Lecture and laboratory. Prerequisite: 211a and 211b.

314-4 Experimental Psychology: Comparative and Physiological. An examination of the physiological and phylogenetic variables affecting behavior. The laboratory will involve work with different types of organisms, emphasizing physiological concomitants of behavior. Lecture and laboratory. Prerequisite: 211b.

C

314-4 Experimental Psychology: Comparative and Physiological. An examination of the physiological and phylogenetic variables affecting behavior. The laboratory involves work with different types of organisms, emphasizing physiological concomitants of behavior. Lecture and laboratory. Prerequisite: 211.

E

320-4 Industrial Psychology. A study of the use of psychological methods in the analysis of human factor problems in business and industry. Prerequisite: GSB 201c.

C

320-4 Industrial Psychology. A study of the functions of psychology as a science and as a profession in contemporary business and industry. Prerequisite: GSB 201c.

E

322-4 Personnel Psychology. A study of the use of psychological methods in the selection, placement, and evaluation of personnel in business and industry. Prerequisite: GSB 201c.

C

323-4 Psychology of Employee Relations. Job satisfaction and morale, psychological aspects of labor relations, interviewing methods, and human relations training. Lecture and laboratory. Prerequisite: GSB 201c.

399a-3 to 9, 399b-3 to 12 Research and Investigation. Honors. Intensive study in selected areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Prerequisite: consent of chairman. (a) For juniors, (b) for seniors.

C

404-4 Theories of Perception. An examination of the different theories concerned with an organism's sensory contact with his environment. Physiological, social, and organizational theories of perception will be considered. Prerequisite: 211a and 211b or consent of instructor.

406-4 Learning Processes. Processes by which individual behavior is changed, using procedures developed in the learning laboratory. Introduction to major concepts and data of learning. Prerequisite: consent of instructor.

407-4 Theories of Learning. A consideration of the major contemporary learning theories and their relation to experimental data. Prerequisite: 211a and 211b or consent of instructor.

408-4 Theories of Motivation. An examination of instinct theories, biological drives, emotions, social motives, and psychodynamic theories as they contribute to a comprehensive psychology of motivation. Prerequisites: 211a and 211b or consent of instructor.

409-4 History and Systems. Study of the important antecedents of contemporary scientific psychology. Considers issues, conceptual developments, and research advances, and presents the major schools and systems. Prerequisite: signed consent of psychology adviser.

420-4 Scientific Methodology in Psychology. Scientific methodology as an approach to investigation and classification of problems involved in understanding the psychological nature of man. Prerequisite: consent of instructor. C

421-4 Psychological Tests and Measurements. Principles of psychological measurement, including errors of measurement, techniques for estimating reliability and validity, techniques of test construction, and problems in assessment and prediction. The laboratory will include the use of selected instruments. Lecture and laboratory. Prerequisite: 8 hours of psychology.

424-4 Psychophysical Methods. Survey of the major psychophysical methods, and their applications. Lecture and laboratory. C

431-4 Psychopathology. Classification, description, etiology and treatment of the disorders of personality organization and behavioral integration. Observations in a state mental hospital setting. Prerequisite: 305 or consent of instructor.

432-4 Mental Hygiene. An integration of psychological knowledge and principles concerning factors and conditions affecting the individual which tend to facilitate or deter mental health. Prerequisite: 305 or consent of instructor.

437-3 Fundamentals of Counseling. Introduction to the common assumptions, dimensions, and communicative skills underlying psychological counseling. Prerequisite: 305 or consent of instructor. E

440-4 Theories of Personality. A review and critical evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor.

451-4 Advanced Child Psychology. An examination of the concepts, methods, and problems of human development with consideration of both its psychological and psychosocial aspects. Prerequisite: 301 or 303 or consent of instructor.

461-4 Advanced Social Psychology. Examines current areas of interest in the study of social behavior: language behavior, communication, social influence, attitude change, interpersonal perception, etc. Emphasis is on the individual in the social context. Prerequisite: 307 or consent of instructor.

465-4 Group Dynamics and Individual Behavior. Examination of research and theory in the area of small-group interaction. Examines such topics as group structure and function, group problem-solving, leadership, etc. Prerequisite: 307 or consent of instructor.

471-4 Work Methods and Measurement. A study of the analysis and evaluation of jobs and the measurement of work performances by the use of standard time tables. Prerequisite: 320 or consent of instructor.

479-4 Psychology of Industrial Conflict. Consideration of social and psychological factors underlying controversies between workers and management. Prerequisite: 320 or consent of instructor. E

490-1 to 8 Independent Projects. Independent readings and projects in psychology. Prerequisite: consent of instructor and chairman.

495-1 to 18 Seminar: Selected Topics. Varied content. To be offered from time to time as need exists and as faculty interest and time permit. Prerequisite: consent of department. C

501-12 (4,4,4) Proseminar in General Psychology. C

509-4 Instrumentation in Behavioral Science. C

512-4 Sensory Processes. C

514-8 (4,4) Physiological Psychology. C

520-4 Research Design and Inference I.	C
521-4 Research Design and Inference II.	C
522-4 Research Design and Inference III.	C
523-2 Research Seminar.	C
524-4 Advanced Research Methodology.	C
525-4 Mental Test Theory.	C
530-4 Personality Theory and Dynamics.	C
531-2 to 4 Advanced Psychopathology.	C
532-2 Experimental Approaches to Personality.	C
533-3 Experimental Approaches to Psychopathology.	C
536-4 Fundamentals of Counseling.	C
537-4 Counseling and Psychotherapy.	C
538-2 Group Psychotherapy.	C
541-6 (4,2) Psychodiagnostics I.	C
543-6 (4,2) Psychodiagnostics II.	C
545-2 Psychodiagnosis III.	C
546-3 to 4 Psychodiagnostics for Special Populations.	C
547-2 Assessment Procedures in Counseling.	C
552-4 Experimental Child Psychology.	C
554-2 Developmental Theory.	C
556-2 Psychological Treatment of the Child.	C
561-4 Social Influence Processes.	C
562-4 Observational Techniques and Content Analysis.	C
564-4 Communication and Group Behavior.	C
571-4 Industrial Motivation and Morale.	C
572-4 Industrial Training.	C
573-4 (2,2) Employee Selection and Evaluation.	C
574-2 Psychology of Industrial Relations.	C
576-2 to 4 Human Engineering.	C
590-1 to 16 Readings in Psychology.	C
591-1 to 36 Research in Psychology.	C
593-1 to 18 Practicum in Psychology.	C
595-1 to 18 Advanced Seminar.	C
598-2 Ethical and Professional Problems in Psychology.	C
599-1 to 9 Thesis.	C
600-1 to 45 Dissertation.	C

RADIO-TELEVISION

161-4 Radio-Television Speaking. Oral and visual speaking techniques for various radio and television speaking situations such as studio announcing, musical and dramatic programs, interviews and newscasts. Extensive microphone and on-camera practice. Audio and video tape recording sessions, as well as radio and TV studio facilities for practice and performance. Three one-hour lectures and one two-hour laboratory each week. C

251-3 Survey of Broadcasting. Examinations of the history of the American system of broadcasting, including discussions of the industry, network structure, and local station organization and economics. Similar examination of various systems of foreign broadcasting.

252-3 Broadcast Production Analysis. A comprehensive examination of requirements and techniques of effective broadcast productions, both radio and television, with specific production improving procedures. A basic requirement for those who would create and write effective broadcast productions of any magnitude, whether for commercial or educational broadcasting. C

260-3 Audio Control Room Practices. Familiarization with and operation of Radio and Television Audio Control Room equipment, such as audio control consoles, turntables, tape recorders and microphones (types, use and proper placement). This course also includes familiarization and operation of remote broadcasting equipment

and facilities. Preparation for FCC Third Class License with broadcast endorsement. Recommended for Radio-TV majors and minors only. C

261-3 Radio Announcing. Vocal and interpretative development. Extensive practice for various announcing situations. Numerous audio recordings. Two one-hour lectures and two-hour laboratory period each week. Prerequisite: minimum grade of C in R-TV 161. C

273-3 Fundamentals of Radio Program Production. Techniques of producing and directing various types of radio programs with emphasis on the creative use of sound effects and music. Deals with such matters as timing, pacing, perspectives, and microphone techniques.

274-5 Basic Television Production. Use of equipment and basic techniques in production of television programs of all types. Three one-hour lectures and one four-hour laboratory per week.

310-4 Radio-TV News. The basic techniques of writing, re-writing, and editing news from local and wire service sources, for presentation on radio and television. Actual practice with the WSIU and WSIU-TV facilities are stressed. Prerequisite: Journalism 103, 201, 202, and 303. C

351-5 Programs and Audiences. The structure of broadcast programs, programming objectives, audience characteristics, analysis methods, preparation of station program schedules. Development, organization and planning of new programs within limitations of budgets and local situations. Program revising. C

352-4 Broadcast Laws and Policies. Legal aspects of broadcasting in America. Precedent legal cases and actions by the Federal Communications Commission. Industry and network codes. International agreements. Prerequisite: 251. C

353-2 Radio and Television in Education. The history and role of radio and television in education. Philosophies for education by radio and television. Analysis of types of educational broadcasting, including in-school broadcasting, adult education, and service programs. C

355-3 Broadcast Persuasion Factors. The analysis of persuasion factors and audience responses in terms of program schedules and production. Prerequisite: 351. C

358-4 Radio Writing. Oral forms of writing for radio, including commercials, features, music scripting, women's and children's programs, etc. Prerequisite: 273.

359-4 Television Writing. The writing of continuity forms for television. The writing of dramatic and documentary scripts for television, with emphasis on development of ideas and plot construction. Prerequisites: 274, 358.

361-3 Television Announcing. Television announcing techniques for such situations as voice-over-film, special events, on-camera studio programs, and commercial presentations. Television studio facilities and video tape facilities for practice and performance. Prerequisite: 261. C

367-3 Radio-Television Production Survey. General survey of production problems in radio and television, including problems of writing, announcing, production, direction, sales and management. No prerequisites. C

369-4 Television Directing. Instruction and practical experience in the directing of television programs. Techniques of directing all types of programs including news, instructional, remotes, panel and music. Two one-hour lectures and one four-hour laboratory each week. Prerequisite: 274. C

370-2 Films for Television. The use of films and video tape in the television industry. Included are sections on local film production as well as programming and securing syndicated programs from outside sources. This course is designed for the student concentrating in television interested in programming and management. C

371-3 Techniques of Staging, Lighting and Graphics for Television. A study of television studio set design, the various techniques of studio lighting, and the special demands of the graphic arts in television production. C

373-1 to 3 Advanced Radio Production Laboratory. Staff work on WSIU-FM including actual production of radio programs from conception through completion. May be repeated. Must be repeated by students concentrating in radio-television for a total of 4 hours minimum, 8 hours maximum, but combined total of 373 and 374 cannot exceed 12 hours. Prerequisite: 273. C

374-1 to 3 Advanced Television Production Laboratory. Staff work on WSIU-TV and Closed Circuit Television operations, including actual production of television programs from conception to completion. May be repeated. Must be repeated by students concentrating in radio-television for a total of 4 hours minimum, 8 hours maximum, but combined total of 373 and 374 cannot exceed 12 hours. Prerequisite: 274. C

375-1 to 4 Problems in Radio-Television Programming.

375J-1 to 4 Individual Research Problems. May be repeated, but for no more than a total of 4 hours. Assignments to be made through consultation with the chairman.

375N-1 to 4 Production Problems. May be repeated, but for no more than a total of 4 hours. Assignments to be made through consultation with radio-television instructors. C

377-3 Radio and TV Advertising. Study and practical radio-television experience in designing and developing promotional and publicity campaigns for the radio and television media. Scope of study includes radio and television advertising and sales techniques, methods and skills. Prerequisite: Journalism 370 and 371. C

385-1 to 4 Radio-TV Special Events. Actual practice in the production, from conception to completion, of various types of special news programs for radio and television, including newscasting, sports casting, special events broadcasting, women's programming, children's programming, farm programming, and home economics programming. May be repeated for a total of 4 hours. Prerequisite: 310. C

390-5 Broadcast Station Management. Objectives, procedures, equipment, costs, and policies in radio and television station development, management and operation. Prerequisites: 251, 351, 352. C

393-3 Radio, Television, and Society. The interrelation of radio and television with social habit patterns and with economic and political systems. International broadcasting. Prerequisite: 251.

RECREATION AND OUTDOOR EDUCATION

100-3 Orientation to Parks and Recreation. An introduction of the student to his professional field. Comparative study of the patterns of work and leisure in folk, urban, and mass societies; of the transition from work for survival, to work as a vocation, to work for leisure. An orientation to the problems of leisure and programming for recreation. C

201-4 Introduction to Recreation Leadership. Introduction to concepts of recreation, its nature, significance, and extent. Its application to schools, park departments, and municipalities. C

202-4 Organization and Conduct of Recreation Programs. A study of essential elements in a community recreation program. Leadership area and facilities, activities, and organization methods. C

220-4 Leadership in Outdoor Recreation. Designed to develop leadership skills in conducting outdoor recreation activities at playgrounds, parks, camps, and other outdoor areas. C

230-4 Recreational Arts and Crafts. Methods and materials in arts and crafts projects suitable for playgrounds, recreation centers, clubs, and camps. Emphasis on the use and care of simple hand tools and the use of native and inexpensive materials. C

301-4 Programs in School Camping and Outdoor Education. Problems in school camping and their solution in specific cases, guidance in planning for school camp facilities, personnel and program, and patterns of administration and leadership techniques. C

302-4 Institutional Recreation. Introduces the basic principles and practices of recreation in a variety of total institutional settings and populations. Emphasis on competencies and skills in working with institutionalized persons. C

305-4 Maintenance and Repair of Recreation Areas, Facilities, and Equipment. A study of methods used in maintenance and repair of park and recreation areas, community centers, special play structures and apparatus, and various kinds of recreation equipment. C

310-3 Social Recreation. Materials and techniques for planning and conducting

- social activities for groups of varying sizes and ages in the many different social situations. C
- 311-2 to 6 Camp Leadership.** (Field Experiences) C
- 312-2 to 6 Playground Leadership.** (Field Experiences) C
- 313-2 to 6 Agency, Community Center, Social Recreation Leadership.** (Field Experiences) C
- 314-2 to 6 Institutional Recreation Leadership.** (Field Experiences) Supervised leadership in a public agency or private agency or at the University's camp at Little Grassy Lake. Emphasis on recreational activities common to such organizational programs. One regularly scheduled group meeting each week to discuss leadership problems and to coordinate materials, principles, and theory with practices in field work situations. Students to spend two hours a week for each hour of credit. C
- 315-4 Recreational Dramatics.** Principles, theory and techniques of producing all types of dramatic activities for recreation. Informal and impromptu drama for the playground and camping situations is stressed. C
- 360-4 Playground Administration.** Practical study of such problems as providing facilities and equipment, setting up the program, budgeting and financing, selecting and supervising the personnel and building good will. One hour a day, four days a week. C
- 365-2 to 4 The Organization and Administration of Community Recreation.** Practical study of such problems as providing facilities and equipment, setting up the program, budgeting and financing, promotion, selecting and supervising the staff, and integrating the administration. C
- 368-4 Camping Administration.** To develop an understanding of accepted methods of selecting and managing personnel, planning programs, maintaining health and safety measures, preparing food, developing camp counselors, evaluating camps, administering business, and doing other related procedures involved in setting up and operating a camp. C
- 413-4 Safe and Healthful Living Outdoors.** Areas to be included are foods, sanitation, survival, plants and animals, natural hazards, emergency care, water, riflery, and others. Prerequisites: 334, and at least 10 hours of biological sciences. C
- 425-4 Construction and Maintenance of Recreation Areas.** Principles of planning, construction, management and maintenance of shelters, utilities, sanitation, structures, erosion control, and other related problems. C
- 450-4 Principles and Interpretations of Recreation.** Principles of recreation in relation to education and everyday life. Basic concepts underlying the interpretation of recreation and leisure in the light of economic, psychological, political, and social conditions. C
- 470-4 Recreation in Public Education.** Emphasis on current practices and trends in curriculum content, adult education, extracurricular activities, after-school and vacation programs, and co-operative programs with other agencies. C
- 480-4 Techniques in Camping.** Preparation of material for use in camps; techniques of camp procedure, camp craft, woodmanship, and crafts. C
- 490-2 to 12 Practicum.** C
- 510-2 to 6 School Camping and Outdoor Education Workshop.** C
- 520-4 Recreation Program Workshop.** C
- 530-4 Organization for Community Recreation.** C
- 540-4 Recreation Surveys and Planning of Facilities.** C
- 550-2 to 6 Field Problems in Community Recreation.** C
- 560-2 to 6 Field Problems.** C

RELIGION

- 204-3 Introduction to the Bible.** C
- 206-3 Personalities of the Old Testament.** C
- 207-3 Bible—Life of Christ.** C
- 208-3 Bible—Life and Writings of Paul.** C
- 210-3 Survey of Roman Catholic Faith.** C
- 211-3 Divine Claims of Christianity.** C

212-2	Analysis of Divine Belief.	C
214-3	Christian Affirmations.	C
215-3	Christian Apologetics.	C
216-3	Marriage and the Christian Home.	C
225-3	Ministry of Music.	C
226-3	Hymnology.	C
227-3	Practical Church Music.	C
228-1	Chapel Singers.	C
235-3	Basic Christian Ethics.	C
240-3	Introduction to the History of Christianity.	C
243-3	History of Christian Worship.	C
244-3	History of Church of England.	C
245-3	Sixteenth Century Protestant Reformation.	C
252-3	Introduction to Religious Education.	C
253-3	Religious Education in the Church.	C
254-3	Church and Community.	C
305-3	Bible—Genesis Through Numbers.	C
307-3	Bible—The Poetical Books of the Old Testament.	C
308-3	Bible—The Prophets.	C
311-3	Christian Doctrine.	C
313-3	Christianity and Communism.	C
315-2	Theology of the Sacraments.	C
335-3	Basic Christian Ethics.	C
337-3	The Teachings of Jesus.	C
346-3	History of the English Bible.	C
351-3	Religious Education of Youth.	C
352-6	(3,3) Church Administration I.	C
354-3	Christian Principles for Teachers.	C

SCIENCE AND TECHNOLOGY

390-1 to 15 **Science and Technology Honors.** Honors work in the biological sciences, chemistry, mathematics, or physics. Entrance to this course is by invitation of the Science and Technology Honors Program Committee. Prerequisite: junior or senior standing. E

SECONDARY EDUCATION

310-4 **History and Principles of Secondary Education.** This course presents the nature, objectives, and current practices found in secondary schools throughout America. Prerequisite: Guidance 305 or Psychology 303, completion of 18 or more quarter hours in a declared concentration or consent of instructor. C

315-3 **High School Methods.** Various types of procedures used for effective classroom teaching constitute the basis of study and discussion. The problem approach and unit method are stressed. Prerequisite: 310. C

315-4 **High School Methods.** Various types of procedures used for effective classroom teaching constitute the basis of study and discussion. The problem approach and unit method are stressed. Prerequisite: Guidance 305 or consent of instructor. E

352-4 to 16 **Secondary Student Teaching.** C

352D-8 to 12 **Secondary Student Teaching.** E

352E-4 to 8 **Secondary Student Teaching.** Prerequisite: 352D-8. E

375-2 to 3 **Readings in Secondary Education.** Readings are selected on the basis of each student's background and future plans. C

402-4 **Aerospace Education Workshop.** Teachers learn about current developments in this area and how to incorporate aerospace information into existing curricula. They study in some detail the social, political, and economic consequences of this era. Prerequisite: consent of instructor. C

407-4 **The Junior High School.** The place of the junior high school in the organ-

izational pattern, with major emphasis upon the areas of organization, administration, and curriculum.

440-3 Teaching Reading in High School. A foundation course in how to teach reading in junior and senior high school: developmental and corrective reading programs; appraisal of reading abilities; methods and materials of instruction. Prerequisite: Guidance 305. C

450-4 to 16 Field Training in Community Development Methods. C

487-4 Teaching the Natural Sciences in Secondary Schools. Objectives of science education; instruction methods and techniques appropriate for teaching science; desirable equipment, audio-visual aids, and instructional material; development of a course outline and at least one instruction unit. Prerequisite: 315 or consent of instructor. E

488-3 Teaching Social Studies in Secondary Schools. Deals with objectives, scope and sequence of curriculum, methods of teaching different courses and age groups, materials and evaluation. Prerequisite: Guidance 305.

490-4 Workshop in Economics Education. (See Economics 490.)

505-4 Improvement of Reading Instruction.

507-2 to 4 Readings in Reading.

508-4 Seminar: Trends in Selected Areas in Secondary Schools.

509-4 to 8 Practicum in Reading.

510-4 to 8 Seminar: Problems in Reading. C

514-4 Organization and Administration of Reading Programs.

516-8 to 12 Internship in Reading. C

518-2 Supervision of Student Teachers.

521-9 (3,3,3) Diagnosis and Correction of Reading Disabilities.

544-9 NDEA Summer Institute for Teachers of German. C

550-4 Core Curriculum in the Secondary School.

560-1 to 8 New Developments in Technological Education. C

562-4 The High School Curriculum.

564-4 High School Principalship.

570-4 Extra-Class Activities. E

575-2 to 4 Individual Research.

586-3 The Change Agent in Planned Change. C

589-2 Seminar in Community Development. C

591-4 Workshop in Current Problems in Secondary Education.

596-5 to 9 Independent Investigation.

597-1 to 3, 598-1 to 3, 599-1 to 3 Thesis. C

600-1 to 48 Dissertation. C

SECRETARIAL AND BUSINESS EDUCATION

(See Business Education)

Tests are given during the first week of all shorthand and typewriting courses to insure the correct placement of students in classes.

201-9 (3,3,3) Typewriting. Mastery of the keyboard, speed and accuracy in the touch operation of the typewriter, and skill and knowledge needed for vocational and personal uses. Must be taken in a,b,c sequence. (a) May not be taken for credit by students who have had previous high school or other formal instruction in typewriting. (b) Prerequisite: 201a or one semester of other formal instruction in typewriting and the ability to type at least 30 words per minute. (c) Prerequisite: 201b or two semesters of other formal instruction in typewriting and the ability to type at least 40 words per minute and to prepare simple business correspondence, tables, manuscripts and forms.

221-12 (4,4,4) Shorthand and Transcription. The Gregg shorthand system and the development of skill and knowledge required in taking dictation and transcribing it on the typewriter. Must be taken in a,b,c sequence. (a) May not be taken for credit by students who have had previous high school or other formal instruction in shorthand. (b) Prerequisite: 221a or one semester of other formal instruction in shorthand-

transcription. (c) Prerequisite: 221b or two semesters of other formal instruction in shorthand-transcription and the ability to take sustained, new-matter dictation at 60 words per minute.

241-1 (C); 241-2 (E) Duplicating. Skills and knowledges in (1) the preparation of master copies and stencils and (2) the operation of liquid and stencil duplicating machines. Prerequisite: 201 or equivalent.

304-3 Advanced Typewriting. Development of advanced skills in typing business correspondence, manuscripts, forms, and tables; preparation of copy from rough draft materials. Prerequisite: 201-9 or three semesters of other formal instruction in typewriting and the ability to type at least 50 words per minute and to prepare business correspondence, tables and manuscripts.

324-8 (4,4) Advanced Shorthand and Transcription. The development of high-level dictation and transcription skills and knowledges. Must be taken in a,b sequence. Prerequisites: (a) 221-9 or three semesters of other formal instruction in shorthand-transcription and the ability to transcribe on the typewriter sustained, new-matter dictation taken at 80 words per minute. (b) 324a or four semesters of other formal instruction in shorthand-transcription and the ability to transcribe on the typewriter sustained, new-matter dictation taken at 100 words per minute.

326-4 Secretarial Practice. An advanced course for secretaries, covering such topics as personality and human relationships, office mail, office equipment, travel, sources of information, communications, and business reports. Prerequisite: 304, 324. C

327-4 Office Theories and Practices. A study of office efficiency, techniques, filing procedures, financial and legal responsibilities, and other office activities. Opportunities to explore reference sources, to prepare for and participate in interviews, to make self evaluations, and to pursue areas of special interest. Operation of dictating and transcribing equipment. Prerequisite: 1 year of typewriting. E

341-4 Calculating Machines. Operation of basic types of office calculating machines, emphasizing the characteristic uses of each kind of machine in the office. Laboratory practice required.

351-4 Foundations of Business Education. The role of the business teacher in the secondary school. An analysis of objectives as related to secondary education; a study of business education courses, scope, and guidance. A survey of trends and external influences. For undergraduate upperclassmen only. E

403-3 Teaching Typewriting. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, standards of achievement, and evaluation of pupil performance. Prerequisite: 201c or equivalent.

404-3 Teaching Shorthand and Transcription. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, standards of achievement, and evaluation of pupil performance. Prerequisite: 324a or equivalent.

405-3 (C); 405-3 to 4 (E) Teaching General (Basic) Business Subjects. Instructional methods and materials for, and the evaluation of pupil progress in, such basic business subjects as general business, consumer education, economic geography, business law. (E) Preparation of teaching units.

406-4 Teaching Office Practice and Office Machines. Instructional methods and materials for, and the evaluation of pupil performance in, office practice and office machines. Prerequisite: 341 or equivalent.

407-4 Office Management. The principles of management as applied to office problems. Emphasis on the role of the office in business management; office organization; physical facilities and layout of the office; office services, procedures, standards, and controls.

408-3 Teaching Bookkeeping and Accounting. Instructional methods and materials for, and the evaluation of pupil progress in, bookkeeping and accounting. Prerequisite: Accounting 251b or equivalent.

427-4 Records Administration. The development of records management from its inception, and the recognition of the need for paper work management. Stress on the use of information management techniques in support of organization manage-

ment, control and evaluation. The course includes each phase of the life of records from creation to disposal or permanent retention. The capabilities of data processing, microphotography, and new developments in information handling equipment stressed throughout.

428-4 Systems and Procedures. A problems approach to the office systems-procedures function in the modern business firm; seminar and laboratory work on improvement of systems and procedures, administrative information and paperwork engineering; theory of office-systems design; systems administration and work simplification. Prerequisite: 407 or equivalent. E

500-2 to 5 Readings in Business Education.

501-2 to 5 Individual Research in Business Education.

502-4 Research in Business Education.

503-4 Tests and Measurements in Business Education.

505-1 to 6 Workshop in Business Education.

506-4 Principles and Problems of Business Education.

507-4 Application and Fundamentals of Data Processing in Business Education. E

508-4 Administration and Supervision in Business Education. E

509-4 Improvement of Instruction in General (Basic) Business Subjects.

510-4 Improvement of Instruction in Secretarial Subjects.

599-1 to 9 Thesis.

SOCIOLOGY

Courses in sociology are listed according to numerical order. However, the second digit in the course number indicates its field as follows:

- 00-09 General Sociology
- 10-19 Methodology and Research Techniques
- 20-29 Social Psychology
- 30-39 Social Organization and Structure
- 40-49 Family
- 50-59 Sociology of Knowledge
- 60-69 Social Disorganization and Deviance
- 70-79 Special Fields
- 80-89 Applied Fields

241-4 Marriage and Parenthood. E

301-4 Principles of Sociology. The structure and functions of social relationship systems, both simple and complex. Analysis of processes of social differentiation, integration, and disorganization. Prerequisite: junior standing.

302-4 Contemporary Social Problems. Discussion and analysis of selected contemporary social problems with consideration of alternative courses of action. Prerequisite: 301.

305-4 Social Institutions. Concepts of institutions; origins, development, and variability of institutions; institutional lag and change. Prerequisite: GSB 201b. C

306-4 Social Control. The means and principles of social controls; social institutions as factors in control; techniques of directing social action. Prerequisite: GSB 201b or 301.

308-3 Statistics for Social Science. Methods and application of statistics in the social sciences. Statistical methods in demography, ecology, testing and guidance, social problems. Examination of empirical studies in these and related areas. Prerequisite: junior standing or consent of instructor. E

312-4 Elements of Sociological Research. Types of research. Principles and steps in research procedure. Selected techniques. Prerequisite: GSD 108-9 or Mathematics 220-4 (C); GSD 114d-3 or 308 (E).

320-4 Race and Minority Relations. Racial and cultural contacts and conflicts, causes of prejudice; status and participation of minority groups; national and international aspects of minority problems. E

321-4 Socialization of the Individual. The process of socialization in infancy, child-

hood, and adolescence; development of habits; attitudes, sentiments; emergence of the self; integration of the individual and society. Prerequisite: 301, or GSB 201b. E

GSB 321-3 Socialization of the Individual. C

322-4 Propaganda and Public Opinion. Techniques and characteristics of propaganda; methods of measuring public opinion. Prerequisite: 301, or GSB 201b.

GSB 325-3 Race and Minority Relations. C

332-4 Social Organization. An examination of the determinants of social organization; intensive analysis of institutional configurations, social stratification, and systems of social control; review of significant writing. Prerequisite: 301. E

333-4 Community Organization. Factors involved in community organization; types, aims, and objectives; community diagnosis; individual case study of specific community. Prerequisite: 301 or GSB 201b.

335-4 Urban Sociology. The rise, development, structure, culture, planning, and problems in early and modern cities. Prerequisite: 301 or GSB 201b.

336-4 Sociology of Rural Life. The structure, functioning, and change of rural social life; study of informal groups, neighborhoods, and communities; social class and value orientation. Prerequisite: GSB 201b, or 301. C

338-4 Industrial Sociology. Social organization and processes within the formal and informal structure of the industrial unit; research and experimental materials concerning social determinants of morale, status and role of the worker. Prerequisite: GSB 201b or 301.

340-4 The Family. The family in historic and contemporary society; evolution of the modern family; changes in family functions, structures, and roles. Prerequisite: GSB 201b or 301.

GSB 341-3 Marriage.

351-4 Sociology of Religion. Function of religious institutions in society and their relationship to other major social institutions; role in social control and group solidarity. Prerequisite: GSB 201b or 301.

GSB 359-6 Society and State: Social and Political Theories. E

371-4 Population and Migration. Characteristics of population, problems of growth, composition, distribution differential fertility, international and internal migration. Prerequisite: 301 or consent of instructor.

372-4 Criminology. The nature of crime; criminal statistics; causal factors; theories and procedures in prevention and treatment. Prerequisite: consent of instructor (E); GSB 201b or 301 (C).

373-4 Juvenile Delinquency. Nature of juvenile delinquency; factors contributing to delinquent behavior; treatment and prevention. Prerequisite: GSB 201b or 301 (C); none (E).

374-4 Sociology of Education. Methods, principles, and data of sociology applied to the school situation; relation of the school to other institutions and groups. Prerequisite: consent of instructor, or GSB 201b or 301.

375-4 Social Welfare as a Social Institution. Interdependence of social, cultural, political and economic factors in the history, theory and practice of social welfare, with special reference to development of the social work profession in response to welfare problems. Prerequisite: GSB 201b or 301.

383-4 Introduction to Interviewing. Theory and practice of interviewing as a means of gaining information, and of understanding and imparting the same. Focus is on the interview as a tool in social work, but principles are generally applicable. Prerequisite: GSB 201b or c, or 301.

388-3 Workshop in Inter-Group Relations. Designed to provide theoretical and practical understanding of the cultural, social, and psychological factors associated with inter-group tension. Participants concentrate their efforts on problem-solving activities related to their occupational, professional, or civic interests. Resource and consultative staff from the academic areas of education, psychology, sociology, and social work. Prerequisite: consent of instructor. E

396-1 to 5 Readings in Sociology. Supervised reading in selected subjects. Prerequisite: consent of division head. E

405-4 Current Sociology. A survey of important trends in contemporary social thought. Students read, report on, and evaluate content of leading sociological journals. Prerequisite: consent of instructor.

406-4 Social Change. Processes of social change in the modern world; culture lag and conflict of norms; individual and social problems arising from conflicting systems of social values and cultural norms. Prerequisite: GSB 201b or 301.

407-4 Integrated Sociology. Integration of sociological concepts and principles: society and culture, the human group, social norms and patterns, status and role, organization, structure, and function, social change. Prerequisite: 15 hours of sociology. E

412-4 Sociological Research. Application of the scientific method to sociological problems. The role of theory. Principles of good research design, measurement, sampling and analysis. Prerequisite: Graduate status or consent of instructor.

415-3 Logic of the Social Sciences. (See Philosophy 415.) C

424-4 Collective Behavior. The behavior of people in large groups; collective inter-stimulation and emotions; crowds, audiences, and publics; mass stimuli and mass response. Prerequisite: 321 or 322, or consent of instructor.

426-4 Social Factors in Behavior and Personality. How group situations and values affect behavior and shape personality; development of concepts, role-concepts, attitudes, values; theories of motivation; self-concepts; conflicting social values in relation to individual motivation. Prerequisite: 321 or Psychology 305, or consent of instructor.

427-4 Personality and Social Adjustment. Basic mechanisms of adjustive behavior; concepts and criteria of personal integration and social adjustment; varieties of adjustive and non-adjustive behavior; theories of personal organization and disorganization; selected problems. Prerequisite: 321 or Psychology 305 or consent of instructor.

435-4 Social Stratification. A comparative study of social class systems, with emphasis on the American systems. Relationships of class position to behavior in family, religion, politics, etc. Prerequisite: GSB 201b, or 301.

438-4 Sociology of Occupations and Professions. Natural history and institutional aspects of occupations in our society, cultural context of occupations in both primitive and modern society, preparation for jobs, human values in work, promotion and discharge, mobility, retirement. Prerequisite: GSB 201b, or 301.

449-4 Sociology of Aging. The social implications of an aging population; social adjustments to the aging process; personal adjustments to the roles and statuses of later maturity; a consideration of retirement and public assistance programs for older people. Prerequisite: GSB 201b or 301. C

450-4 Social Thought I: Before 1800. The ideological basis of Western society. The classical foundations. Trends of thought from the Renaissance to the Enlightenment. Prerequisite: consent of instructor.

451-4 Social Thought II: The Sociological Movement. From Romanticism to Realism; rise and development of scientific social thought. Prerequisite: consent of instructor.

453-4 Social Movements. A sociological study of modern social movements; social and cultural backgrounds, forms of expression and organization; social structure of social movements, their role and function in modern society. Prerequisite: GSB 201b or 301.

470c-4 Urban Planning. (See Government 470.) E

471-4 Principles of Demography. Techniques in analyzing and evaluating data on human population; composition, birth and death rates, life tables, migration data, estimates of future trend. Practical uses of demographic techniques. Prerequisites: consent of instructor. C

472-4 The American Correctional System. Principles of penology; history of punishment and prisons; criminal law, police function, criminal courts; the prison community; the juvenile court and related movements. Prerequisite: 372 or consent of instructor.

480-2 History and Legal Aspects of Rehabilitation. A survey of historical and legal developments in rehabilitation agencies, with particular emphasis on current theories and trends. Open only to students in the Rehabilitation Institute. C

481-4 Processes in Social Work. Theory, rationale, and practice of casework, group work, social welfare organization, and the roles of supervision, administration, and research in relation to each. Case material study and discussion with field observation and practice. Prerequisite: 375 or consent of instructor.

482-3 (C); 482-4 (E) Social Work in Selected Agencies. Study of representative literature on casework in family, psychiatric, medical, school, military, child welfare, and correctional settings, and others. Case material study and discussion with field observation and practice. Prerequisite: 481.

483-3 Current Problems in Corrections. An exploration of contemporary problems in the control and treatment of sentenced offenders. Prerequisite: consent of instructor.

484-4 Survey Course in Marriage Counseling. Survey and analysis of the field of marriage counseling; assessment of current practices and techniques in terms of contemporary sociological theory. Prerequisites: GSB 341, and consent of instructor.

485-6 Community Programs for the Prevention of Juvenile Delinquency. Analysis of delinquency prevention in community programs administered by various agencies. A critique of existing programs and development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: consent of instructor. E

486-1 to 5 Independent Study in Community Development. Individual study and projects designed to fit the needs of each student. Prerequisite: consent of instructor. C

487-7 (4,3) Community Development. (a) The concepts of community development and analysis of the social-psychological forces and processes involved in citizen study, planning and action directed toward the fuller development of communities in a democratic society. (b) Principles and procedures applicable to solving social problems in the context of a community development program. Laboratory period for field trips. Must be taken in a,b sequence. Prerequisite: 4 hours of sociology or equivalent. C

489A-3 The American Correctional System. A survey of the correctional field covering probation, institutions, and parole; their historical development, organizational structure, program content, and current problems.

489B-4 Probation, Classification, and Parole. An introduction to the structure and function of those elements of the correctional process primarily concerned with the evaluation, treatment, and control of offenders with particular attention to the case-work components of the process. Prerequisite: 481 or consent of instructor.

489D-3 Problems in Correctional Research. The problems of designing and conducting research in correctional institutions and agencies, a review of research trends in corrections. Prerequisite: 483 or consent of instructor. C

489E-2 to 4 Independent Study in Corrections. Supervised readings or independent investigative projects in the various correctional aspects of crime control, institutional management, and specific correctional programs. Prerequisite: consent of instructor. C

501-4 Survey of Sociological Theory.

502-4 Seminar in European Sociological Theory: 1800-1910. C

503-4 Seminar in European Sociological Theory: 1910 to the Present. C

504-4 Seminar in American Sociology.

506-4 Seminar in Contemporary Sociological Theory.

519-4 Methodological Foundations of the Social Sciences.

521-4 Seminar in Social Psychology.

526-4 Quantitative Methods in Sociology I. C

527-4 Quantitative Methods in Sociology II. C

528-4 Quantitative Methods in Sociology III. C

529-4 Sociological Measurement. C

530-4 Research Design.	C
531-4 Research Analysis.	C
533-4 Ecology of Human Communities.	C
534-4 Seminar in Intergroup Relations.	
535-4 Race and Education in American Society.	C
537-4 Sociology of Law.	C
538-4 Seminar in Industrial Sociology.	
539-4 Sociology of Bureaucracy.	C
542-4 Seminar on the Family.	
543-4 Seminar in Family Variability.	C
544-4 Seminar in Family Research.	C
545-4 The Family and Social Change.	C
561-4 Alcohol and Society.	C
562-4 Deviance and Disorganization.	C
563-4 Research Problems in Deviance and Disorganization.	C
564-4 Social Factors in Mental Disorders.	C
566-4 Community Organization and Disorganization.	C
572-3 Seminar in Criminology.	C
582-4 Criminal Law and the Correctional Process.	C
583-4 to 12 Supervised Field Work in Corrections.	C
584-4 Seminar in Correctional Program Management.	C
586-3 The Change Agent in Planned Change.	C
587-2 to 8 Individual Research in Community Development.	C
591-2 to 6 Individual Research.	C
596-2 to 12 Readings in Sociology.	
599-2 to 9 Thesis.	
600-1 to 48 Dissertation.	C

SPECIAL EDUCATION

200-2 Orientation to the Education of Exceptional Children. A survey of exceptional children. Program modification by regular classroom teachers is stressed.	C
351D-8 Elementary Student Teaching.	E
406-4 Techniques and Interpretation of Hearing Tests. (See Speech Correction 406.)	C
409-4 Problems and Characteristics of the Emotionally Disturbed Child.	E
410A-4 Problems and Characteristics of the Emotionally Disturbed Child. Diagnosis, screening, classroom management, placement considerations, goals and the effective use of ancillary services. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior dynamics.	E
410-4 Problems and Characteristics of the Mentally Retarded. Objectives, curriculum, methods, and materials of instruction for slow learners. Emphasis upon the principles of learning as they can be applied to this group. Observations. Prerequisite: Guidance 305 or Psychology 301 or 303.	C
411-4 Education of the Partially Sighted and Blind. A study of the objectives, curriculum, methods, and techniques of instruction of classes for the partially sighted. Special emphasis on sight conservation in the regular classroom, special equipment, and observation of sight-saving classes. Prerequisites: Guidance 305, Psychology 301 or 303.	C
412-4 Education of Gifted Children. Designed to help teachers in the identification of and programming for gifted and talented children. Prerequisite: Guidance 305 or Psychology 301 or 303.	
413A-4 Directed Observation of the Emotionally Disturbed. Taken concurrently with Special Education 410A, provides student observation and participation in the individual work with emotionally disturbed children. Prerequisite: consent of instructor.	E
413-4 Directed Observation of the Educable Mentally Handicapped. Taken concurrently with Special Education 410, provides student observation and participa-	

tion in individual work with the educable mentally handicapped children. Prerequisite: consent of instructor. C

414-4 The Exceptional Child. Physical, mental, emotional, and social traits of all types of exceptional children. Effects of handicaps in learning situations. Methods of differentiation and techniques for rehabilitation. Individual case studies used; observations and field trips. Prerequisites: Guidance 305, Psychology 301 or 303.

415-4 Education of the Deaf and Hard of Hearing. Methods of teaching reading and developing language sense in the deaf and hard of hearing. Tactile, visual, and kinesthetic experiences; hearing aids and other special equipment presented in terms of their educational application. Observations. Prerequisites: Guidance 305, Psychology 301 or 303, Speech 105 and 212, or equivalent. C

416-4 Education of Orthopedic Children. Objectives, curriculum, methods, and techniques of instruction of classes for orthopedic children. Emphasis given to program organization, special types of equipment, and observation of classes for the orthopedic. Prerequisite: same as 410. C

417-4 The Atypical Child and Social Agencies. A survey of social agencies contributing to the welfare and care of exceptional children. Emphasis given to services rendered and to methods of contact and cost. Visits made to agencies and institutions: specialists invited to appear before the class. Prerequisites: Guidance 305 or Psychology 301 or 303, and Sociology 101. C

418-4 Workshop in Special Education. Designed to promote better understanding of the psychological and educational problems of atypical children. Specialists used as consultants. Open to seniors and graduate students majoring in education, guidance, or special education.

419-4 Communication Problems of the Deaf and Hard of Hearing. (Same as Speech Correction 419.) Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 406 or consent of instructor. C

420a-4 Methods and Materials in the Education of the Emotionally Disturbed. Offered in conjunction with practice teaching, dealing with methods and materials needed in teaching emotionally disturbed children. E

420-4 Methods and Materials in the Education of the Educable Mentally Handicapped. Offered in conjunction with practice teaching, dealing with methods and materials needed in teaching educable mentally handicapped children. C

428-4 Speech Correction for the Classroom Teacher. (Same as Speech Correction 428.) Etiology and therapy of common speech defects. Open to in-service teachers, seniors, and graduate students in education.

481a-4 Seminar: Emotionally Disturbed. E

481b-4 Seminar: Educable Mentally Handicapped. E

481c-4 Seminar: Gifted. E

481-4 Seminar. C

501-4 Special Research Problem.

513-4 Organization, Administration, and Supervision of Special Classes.

570-2 Seminar: Vocational Guidance of the Handicapped. C

571-2, 572-2 Special Problems of the Handicapped I, II. C

573-3 to 4 Psychodiagnostics for Special Populations. C

574-1 to 12 Supervised Experience in Rehabilitation. C

577-4 to 12 Practicum in Special Education.

580-8 (4,4) Seminar: Exceptional Children. C

590-12 (4,4,4) Seminar: Mental Retardation. C

596-5 to 9 Independent Investigation. C

599-2 to 9 Thesis. C

S P E E C H

General Speech: 408-4, 429-4, 440-4, 449-4, 450-12 (4,4,4), 520-3, 530-1 to 4, 532-4, 599-2 to 9, 600-3 to 48.

Oral Interpretation of Poetry: 423-4, 424-4, 434-4, 523-3, 530-1 to 4, 599-2 to 9.

Rhetoric and Public Address: 407-8 (4,4), 417-4, 418-4, 425-3, 500-4, 504-3, 505-4, 508-4, 510-4, 524-3, 530-1 to 4, 599-2 to 9.

Speech Education: 402-4, 410-4, 427-4, 511-3, 525-4, 530-1 to 4, 599-2 to 9.

102-4 Public Speaking. Analysis of audience motives and reactions stressed in the approach to speech preparation for typical public speaking situations. Prerequisite: GSD 103-3.

104-4 Training the Speaking Voice. Designed for those students who desire to improve their voice and articulation. Prerequisite: GSD 103.

108-6 (0 to 3, 0 to 3) Speech for the Foreign Born. Designed to facilitate the learning of American English. May be substituted by foreign-speaking students with consent of chairman. C

200-4 Phonetics. Instruction on the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds. C

201-2 Parliamentary Law. How to conduct a meeting. Study and practice of the rules of parliamentary procedure. C

202-3 Principles of Discussion. Principles and methods of group discussion. Current problems used as materials for discussion.

205-3 Principles of Argumentation and Debate. Principles of argument, analysis, evidence, reasoning, fallacies, briefing, and delivery.

209-1 Forensic Activities. Not more than three hours of credit, and no more than two each year, to be secured for participating in forensic activities. Note: A maximum of five hours of 209 and 309 may be applied on a major in speech. A maximum of eight hours of 209 and 309 may be applied toward graduation. Prerequisite: Consent of instructor.

300-4 Phonetics of American English. Study of the phonetics of American English with particular emphasis in the major American dialects. Course designed especially for concentrations in speech, theater, and radio-TV. Prerequisite: 200 or consent of instructor and department chairman. C

301-4 Persuasion. Psychological principles involved in influencing individuals and groups.

303-4 Business and Professional Speaking. Speaking needs of business and professional people. Technical reports and lighter types of speaking included in the types studied. Primarily for adult and extension classes.

304-3 Great Speeches in American and British History. Speakers as they deal with historic issues in America and Britain. C

309-1 Forensic Activities. Not more than four hours of credit, and no more than two each year, to be secured for participation in forensic activities. Note: A maximum of five hours of 209 and 309 may be applied on a major in speech. A maximum of eight hours of 209 and 309 may be applied toward graduation. Prerequisite: junior standing and consent of instructor.

313-4 Speech Composition. Rhetorical techniques of public address. One major speech prepared, with every possible refinement. Prerequisite: 102. C

323-4 Oral Interpretation II. A basic course in the oral interpretation of literature with emphasis on vocal techniques in relation to literary analysis. Prerequisite: GSC 200 or consent of instructor. C

406-4 Teaching Speech in Secondary Schools. Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: 16 hours of speech.

407-8 (4,4) American Public Address. Critical studies of American speakers; selected speakers and speeches which reflect the dominant social and political ideas in American history. A lecture, reading, and discussion course. Parts may be taken independently.

408-4 Psychology of Speech. Nature and development of speech, its basic psychology, and the part speech plays in personality development.

417-4 Contemporary Public Address. A critical study of speakers and speeches selected to present the characteristic ideas of leading social and political developments

in national and international affairs since 1918. A lecture, reading, and discussion course. C

418-4 British Public Address. Critical study of British speakers to c. 1920. Selection of material will be governed both by men and the issues that moved men throughout British history. C

422-4 Oral Interpretation of Prose. The study of reading of prose literature emphasizing the specific problems posed for the oral reader by this form. Prerequisite: GSD 200, 323, or consent of instructor. C

423-4 Oral Interpretation of Poetry. The reading of poetry and the interpretation of the thought and emotional content of the poetry to the audience. Prerequisite: GSD 200, 323. C

424-4 Oral Interpretation of Dramatic Literature. Reading, selecting, cutting, and presenting various types of dramatic literature. Each student gives a final recital program of readings. Prerequisites: GSD 200, 323. C

425-3 Techniques of Discussion Leadership. Studies in the field of group discussion designed to clarify the functions and concepts of the leader in democratic society. C

427-4 Secondary School Forensic Program. Coaching and organizational methods for extracurricular and curricular forensic programs in the secondary schools. C

429-4 Experimental Studies in Oral Communication. A survey, analysis, and criticism of experimental approaches to the study of oral communication, with practice in planning and conducting experimental studies. C

434-4 Lecture and Lecture-Recital. Study of professional work on the public platform which is climaxed by a lecture or recital of a professional nature. Prerequisite: 12 hours of public speaking, interpretation, or theater. C

440-4 Advanced Phonetics. Phonetic theory. Materials and methods of linguistic geography. Prerequisite: 200. C

441-4 Teaching Speech in Elementary Schools. Study of oral language development in children, analysis of their speech needs, and methods of teaching speech in elementary schools with emphasis on speech improvement and development of basic speech skills. C

449-4 General Semantics. Means of changing implications so that language, in spoken or written form, describes the life facts.

450-12 (4,4,4) Laboratory in Interpersonal Communication. Communication viewed as a process of relating and evaluating. Applications of general semantics and related philosophy, methodology, and research to the functioning of the class itself through various speech activities. The course encompasses the common core of communication behaviors relevant to the chief communication specialties. C

500-4 Survey of Classical Rhetoric. C

504-3 Medieval Rhetorical Theory. C

505-4 Modern Rhetorical Theory. C

508-4 Seminar: Studies in Discussion. C

510-4 Seminar: Persuasion and Social Control. C

511-3 Teaching the College Speech Course. C

520-3 Philosophical Foundations of Speech. C

523-3 Seminar: Problems in Interpretation. C

524-3 Problems in Rhetoric and Public Address. C

525-4 Seminar: Speech Education. C

530-1 to 4 Research Problems. C

532-4 Areas and Techniques of Research in Speech. C

599-2 to 9 Thesis. C

600-1 to 48 Dissertation. C

SPEECH CORRECTION

100-0 to 2 Speech Clinic. For students with speech and hearing deviations who need individual help.

104-4 Training the Speaking Voice. For those students who desire to improve their voice and articulation. C

108-6 (0 to 3, 0 to 3) Speech for the Foreign Born. Designed to facilitate the learning of American English. May be substituted by foreign-speaking students for Speech 101, with permission of department chairman. C

200-4 Phonetics. Instruction in the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds.

203-4 Introduction to Speech Science. An introduction to the science of general speech including the history of research in the field and significant experimental trends in the future. Open to all students.

212-4 Articulatory Problems and Delayed Speech. Designed to acquaint the student with articulatory speech defects. Diagnostic and therapeutic techniques stressed. Prerequisite: 200 or concurrent.

318-4 Voice and Cleft Palate. Voice disorders including cleft palate. Prerequisite: Speech Correction 212, or consent of the instructor.

319-4 Stuttering. Deals with diagnostic and therapeutic techniques for the understanding and treatment of stuttering. Prerequisite: Speech Correction 212, or consent of the instructor.

400-1 to 4 Independent Study in Speech Correction and Audiology. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with instructor. May be repeated up to six hours of credit. C

405-12 (4,4,4) Practicum in Speech and Hearing Therapy. Clinical and school procedures in speech correction and audiology. One hour of class per week, and two hours of clinical activity or work on clinically related projects for each hour of credit. Prerequisite: Junior Standing in Department. 405A (fall) emphasizes therapeutic procedures. 405B (winter) emphasizes diagnostic techniques. 405C (spring, summer) emphasizes the utilization of forms and the preparation of reports. Students may have up to twelve hours total credit in this course. Need not be taken in sequence.

406-4 Techniques and Interpretation of Hearing Tests. Principles and techniques of testing the hearing and interpreting those tests in terms of the individual's needs.

409-4 Research Techniques in Speech Science. A presentation of the research techniques used in speech science with particular emphasis on equipment, experimental design, and study of significant research contributions to the field. Open to advanced students in speech or those with consent of the instructor. C

412-4 Cerebral Palsy. An investigation of the etiology, problems, and therapy of cerebral palsy. Prerequisite: 212 or consent of instructor. C

414-4 Anatomy and Physiology of Speech and Hearing Mechanisms. (See Physiology 414.) C

415-4 Aphasia. An investigation of the etiology, problems, and therapy of aphasia. Prerequisite: 412 or consent of instructor. C

416-4 Hearing. Designed to acquaint the student with the theories and facts concerned with the functions of the hearing mechanism. Prerequisite: 406 or consent of instructor. C

419-4 Communication Problems of the Deaf and Hard of Hearing. (Same as Special Education 419.) Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 406 or consent of instructor. C

420-4 Advanced Clinical Audiometry. Principles and procedures for advanced audiometric testing. Prerequisite: 406 or consent of instructor. C

428-4 Speech Correction for the Classroom Teacher. (Same as Special Education 428.) Etiology and therapy of common speech defects. Open to in-service teachers, seniors, and graduate students in education.

515-1 to 4 Readings in Speech Pathology. C

516-1 to 4 Seminar in Residual Hearing. C

520-1 to 4 Seminar in Hearing. C

521-1 to 4 Seminar in Articulation and Delayed Speech. C

522-16 (4,4,4,4) Seminar in Organic Speech Problems. C

529-12 (4,4,4) Seminar in Stuttering Behavior. C

530-1 to 4 Research Problems in Speech Correction.	C
531-1 to 4 Seminar in Experimental Phonetics.	C
533-1 to 4 Seminar in Speech Science.	C
534-1 to 4 Seminar in Instrumentation.	C
536-1 to 4 Seminar in Administration of Speech and Hearing Programs.	C
599-2 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

TECHNOLOGY

101-9 (3,3,3) Graphics. (a) Basic principles of graphic communications, orthographic projection, sections and conventions, dimensioning, pictorial drawing. (b) Graphic solutions of problems involving the spatial relationships of points, lines, and planes. (c) Intersections and developments, conventional practices, charts and graphs. Laboratory. 101a is prerequisite for b or c.	C
259-3 to 60 Shop and Drafting Subjects. This is a designation for shop or drawing credit earned, or for trade proficiency, when credit is to be established for work above the high school level. Credit in this course will be established by departmental evaluation. Prerequisite: junior standing.	C
300-9 (3,3,3) Application of Fundamental Physical Principles. A general coverage of applied science and the physical principles and systems which control man's exploitation of scientific discovery. (a) Applied mechanics, heat and wave motion. (b) Principles of electricity, magnetism, geometrical optics and quantum physics. (c) Introduction and analysis of the various technological and industrial systems, subsystems and components with special emphasis upon the design process, problem formulation, analysis, and decision phase.	C
319-3 to 24 (3 per quarter) Industrial Internship. Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences and examinations. Prerequisite: consent of coordinator.	C
421-2 to 8 Practicum in Technology. Experiences in the industrial applications of technological knowledge. Cooperative arrangements with selected corporations and professional organizations provide opportunity to study technical problems in the industrial environment under the direction of specialists. Prerequisite: 12 hours in technical subjects. Consent of coordinator.	C
430-2 to 8 Special Problems in Industry and Technology. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Prerequisite: consent of coordinator.	C
570-2 to 6 Special Investigations.	C
580-3 to 9 Seminar.	C
599-1 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

THEATER

111-9 (3,3,3) Staging Techniques. All phases of dramatic production in connection with departmental public presentations. Lectures and laboratory.	
204-4 Acting. Basic techniques of acting in all dramatic media. Emphasis on expression through bodily action and movement.	
207-4 Fundamentals of Theatrical Design. A basic course employing graphic media and workshop exercises designed to acquaint theater majors with the problems encountered by the director, scene designer, costumer, and lighting director in providing a suitable environment, by visual means, for the actor.	
208-1 to 3 Dramatic Activities. Credit to be earned by participation in public performances.	
305-2 Stage Make-up. Theory and technique of various types of make-ups.	C
308-1 to 3 Dramatic Activities. Same as 208.	
311-4 Introduction to Playwriting. The preparation of a one-act play from germinal	

idea to completed script. Those scripts indicating a certain level of artistry and technical control to be produced in a laboratory theater program. Course includes the analysis of dramaturgical technique and theory through the study of selected plays and criticism. Prerequisite: one course in dramatic literature and consent of instructor.

314-4 Advanced Acting. Theory and practice of acting in dramatic productions. C
322-2 to 12 Practicum in Theater. Practical experience in acting, directing, and associated theater work in area tours and summer stock. Credit may be earned for the course both on tour and in stock. C

GSC 354-6 (3,3) History of the Theater.

402-8 (4,4) Play Directing. (a) The principles and procedures of play direction including play selection, interpretation, and the patterning of auditory and visual stimuli. (b) Continuation of 402a emphasizing rehearsal procedures, control of tempo and mood, styles of presentation and performance, and other techniques in the direction of plays.

403-4 Aesthetics of the Drama and the Theater. Principles and practice of modern dramatic production in the light of modern aesthetic theory. A course attempting to formulate an aesthetic judgment of the theater. C

404-4 Theater Management. Theater operational procedure, including both fundamental structuring and house management. The former aspect includes administration, purchasing, and accounting practices, ticket sales, publicity, promotion, and public relations. The latter aspect covers the management of box-office and ushering. C

405-8 (4,4) The Scenic Imagination. (a) A study of the purely creative side of stage production. It includes an analysis of the script and its meaning for an audience; a poetic evaluation of the setting, costumes, and lighting; and the blocking out of the stage action. (b) Theater research and documentation; an approach to sketches and models; a review of the historic forms of staging, with emphasis on the modern styles from naturalism to epic theater. C

406-1 American Professional Theater Procedures and Practices. An introduction to the everyday realities of a professional stage career, including problems of survival, professional ethics and protocol, personal relations, and the function of stage unions. C

409-4 High School Theater and Its Production Problems. C

410-3 Children's Theater. Creative dramatics; dramatization of children's literature; play production for elementary schools. Recommended for education concentrations.

411-4 Playwriting. The writing of a full-length play, a children's play, or a historical pageant-drama forms the basis of the course. Students may elect to write two one-act plays. Individual conferences supplement the class discussion and analysis of student writing. Prerequisite for graduate students: consent of instructor. C

412-4 Stage Design. The design of settings for the stage and other dramatic media. Prerequisite: 207. C

414-4 Costume Design. C

415-4 Advanced Costume Design. C

432-4 Stage Lighting. Instruments and control equipment; principles and techniques of lighting dramatic productions. C

438-4 Contemporary Developments in the Theater. Critical study of theory and practice in acting, directing, production, and architecture in the modern theater. The rise and development of the film, radio, and television as dramatic media.

502-4 Advanced Directing. C

503-4 Advanced Technical Problems. C

504-4 The Comic Theater. C

505-4 The Tragic Theater. C

506-4 The American Theater. C

509-4 The High School Theater and its Production Problems. C

518-4 Theater Audience. C

519-1 to 12 Theater Practicum. C

526-3 Seminar in Theater Arts. C

530-1 to 4 Research Problems in Theater.

C

599-1 to 9 Thesis.

C

ZOOLOGY**100-5 Principles of Animal Biology.**

E

102-5 General Invertebrate Zoology. Studies of representatives of the various kinds of invertebrate animals. Relationships, structure, and natural history are emphasized. Prerequisite: GSA 201c (C); GSA 201a (E).

103-5 General Vertebrate Zoology. Studies of representatives of the various kinds of vertebrate animals. Evolutionary development, structure, and natural history are emphasized. Prerequisite: GSA 201c (C); GSA 201a (E).

202-5 Comparative Anatomy. Comparative studies of the organ systems of vertebrate animals, with emphasis on the phylogeny and evolution of these organs. Two lecture and six laboratory hours per week. Prerequisite: 103.

300-5 Vertebrate Embryology. Development of the individual with the frog, chick, and pig as types. Two lectures and six laboratory hours per week. Prerequisite: 202.

303-4 General Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. Cost of field trips may be \$5 to \$10 per student. Two lecture and four laboratory hours per week. Prerequisite: GSA 201c (C); GSA 201b (E).

306-4 Entomology. Principles of the structure, classification, and life histories of insects. Prerequisite: 102.

310-5 Animal Ecology. Habitats, communities, and population dynamics of animals. Cost of field trips may be \$5-\$25 per student. Three lecture and four laboratory hours per week. Prerequisite: 102, 103.

GSA 312-3 Conservation of Natural Resources.

C

GSA 313-3 Evolution.

C

313-3 Evolution. Principles, processes, and evidence for evolution in living organisms. Prerequisite: one year of biological science.

E

GSA 314-3 Man's Genetic Heritage.

C

314-4 Heredity and Eugenics. Principles of heredity in relation to man. Prerequisite: 100 or Botany 101 or GSA 201b or c.

E

GSA 315-3 History of Biology.

C

316-4 Insect Pests and Their Control. Principal injurious insects and their allies; chemical and biological methods of control. (Credit may not be used toward a concentration in zoology.) Prerequisite: GSA 201c.

C

321-5 Histological Technique in Zoology. Methods of preparing material for microscopic study. Two lecture and six laboratory hours per week. Prerequisite: one year of biological sciences or consent of instructor.

322-2 to 5 Problems in Zoology. Research on zoological problems. Prerequisite: 4.25 grade-point average, senior standing, and approval of the department or faculty. (Credit may not be used toward a secondary concentration in zoology.)

335-4 Field Zoology. Taxonomy, natural history, and distribution of local animals. Cost of field trips may be \$10-\$25 per student. Prerequisites: 102, 103.

E

382-1.5 (1/2, 1/2, 1/2) Zoology Seminar for Seniors. Required each term of seniors concentrating in zoology. Prerequisite: senior standing.

400-2 (C); 400-3 (E) Animal Taxonomy. The concepts of taxonomy and their use in zoology. Prerequisite: one year of biology or consent of instructor.

401-5 Genetics. Principles of inheritance, including genetic mechanisms, mutation, and selection. Prerequisite: 15 quarter hours of biological science and consent of instructor.

402-4 Natural History of Invertebrates. Observation, identification, and life histories. Designed for teachers. Not for students specializing in invertebrate zoology. Prerequisite: one year of zoology including 102.

403-4 Natural History of Vertebrates. Observation, identification, and life histories. Designed for teachers. Not for students specializing in vertebrate zoology. Prerequisite: one year of zoology including 103.

404-2 to 8 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and/or with methods of field study, collection, and preservation. Arrangements made in advance of term. Cost per individual will be approximately \$25 per week. (Only 4 hours may be used for credit.) Prerequisite: consent of department.

406-4 Protozoology. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods of culturing and studying. Prerequisite: one year of zoology including 102 or consent of instructor.

407-5 Parasitology. Principles, collection, identification, morphology, life histories, and control measures. Prerequisite: one year of zoology including 102.

408-4 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. Prerequisite: one year of zoology, including 103.

409-5 Histology of Organs. Microscopic structure of organs and tissues with emphasis on mammalian forms. Prerequisite: 202. C

410-5 Vertebrate Paleontology. History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships. Prerequisite: one year of zoology including 202 or Geology 221. C

412-4 Advanced Entomology. Morphology, physiology, systematics, and distribution of insects. Prerequisite: one basic course in entomology.

413-5 The Invertebrates. Structure, development, and natural history of invertebrates, except insects and parasites. Prerequisite: one year of zoology, including 102. C

414-4 Freshwater Invertebrates. Taxonomic groups, identification, and natural history of the regional fauna. Prerequisite: one year of zoology, including 102.

441-4 Developmental Biology. Principles of development and organization. Prerequisite: 300 and one course in cellular physiology, or consent of instructor.

459-4 Game Birds. Natural history and management. Prerequisite: one year of zoology including 103. C

461-4 Mammalogy. Taxonomic groups, identification, and natural history of mammals. Prerequisite: one year of zoology including 103.

463-4 Game Management. General survey of management techniques. Prerequisite: 15 hours of biological science, consent of instructor. C

465-4 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Prerequisite: one year of zoology, including 103.

466-4 Fish Management. Sampling, dynamics, and manipulation of fish populations, age and growth of fishes, and habitat improvement. Prerequisites: 15 hours of biological science, consent of instructor. C

480-3 Zoogeography. Concepts and principles relating to patterns of animal distribution on a continental and world-wide basis. Prerequisite: 103 or consent of instructor. E

501-4 Animal Biology For High School Teachers of Biology.

502-2 Recent Developments in Biological Sciences.

507-8 BSCS—High School Biology.

508-4 Helminthology. C

509-8 (2,2,2,2) Topics in Biology. E

510-4 Bio-ecology. C

511-4 Limnology.

512-3 Animal Geography. C

513-3 Advanced Ornithology. C

520-5 Advanced Invertebrates.

521-4 Advanced Limnology. C

525-5 Cytology. C

540-3 Factors in Animal Reproduction. C

560-3 Advanced Game Management. C

561-4 Game Mammals. C

566-4 Fish Culture. C

578-4 Population Genetics.

579-4 Animal Behavior. C

580-4 Advanced Systematics. C

581-3 Readings in Current Zoological Literature.

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582-1.5 (.5,.5,.5) Graduate Zoology Seminar.

583-3 (1,1,1) The Teaching of Zoology in College.

C

584-3 (1,1,1) Protozoology Seminar.

C

596-3 to 12 Special Research.

599-2 to 9 Research and Thesis.

600-3 to 48 Research and Dissertation.

C

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Faculty : 10

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